

Appendix 2.

Program Budget Information

(Task 6, 7 Report: Program Funding and
Organization.)

FINAL REPORT

Task 6 - Program Funding

Task 7 - Program Organization

Program Funding And Organization

CITY OF INDIANAPOLIS
DEPARTMENT OF PUBLIC WORKS

INDUSTRIAL PRETREATMENT PROGRAM



Peat, Marwick, Mitchell & Co.

**JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.**



TASKS 6 and 7

**EMS Laboratories/
Mark Battle Associates, Inc.**



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April 15, 1983

Dr. Vicky Keramida
Project Manager
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Dear Dr. Keramida:

As part of our contract to develop a pretreatment program for the City of Indianapolis, Peat, Marwick, Mitchell & Co. is pleased to submit our final draft report for Tasks 6 and 7 entitled "Program Funding and Organization." This document presents the background, options, and recommended program for the funding and staffing portion of the pretreatment effort.

The report was prepared by Peat, Marwick, Mitchell & Co. with input from James M. Montgomery, Inc., and Mark Battle Associates (MBA). As part of this task, MBA conducted a review of the budget, staffing, and organization of other pretreatment programs and assisted Peat Marwick in the development of cost allocation options and management procedures.

This document was developed to fulfill the State of Indiana Activity Two-II Requirements, Program Funding, and the Activity Two-III Requirement, Program Personnel, and to respond to EPA's requirement for "sufficient resources and qualified personnel to carry out procedures" (40 CFR 403.8(f)(3)).

We have enjoyed working with you on this project, and we look forward to reviewing this document with you.

Very truly yours,

John A. Wander / JAW

John A. Wander, Principal

ACKNOWLEDGEMENTS

This report was prepared by Peat Marwick as a part of the City of Indianapolis Pretreatment Program. Peat Marwick was assisted in the development of this document by Mark Battle Associates (MBA) and James M. Montgomery, Inc. (JMM). The report was prepared with the assistance and review of Dr. Vicky Keramida, Department of Public Works Project Manager, and Mr. Dale Bertelson, Chief of the Industrial Surveillance Branch. Peat Marwick's principal author was Larry J. Scully, and Mark Battle Associates' principal contributor was Mr. Peter O'Donohue. The James M. Montgomery team was led by Dr. Larry Russell and Mr. Chris Cain.

CITY OF INDIANAPOLIS PRETREATMENT PROGRAM
PROGRAM FUNDING AND ORGANIZATION
TASKS 6 AND 7

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I. INTRODUCTION

As part of its efforts to improve water quality, the city of Indianapolis initiated development of an industrial waste pretreatment program. This program was designed to fulfill city objectives and to comply with regulations of the State of Indiana and the federal Environmental Protection Agency (EPA). This report presents the resource and staffing evaluations denoted in Project Tasks 6 and 7.

As a part of the pretreatment program, the State of Indiana requires the city to evaluate:

- . available personnel; and
- . the sufficiency of revenue sources for funding program operation.¹

As part of the evaluation of available personnel, the State requires the city to:

- . provide position descriptions of program responsibilities;
- . describe additional personnel needed; and
- . provide an organizational chart.

In addition, the city is to estimate the cost and revenues for the program. The cost estimate must include:

- . estimate of work hours per year needed for each task;
- . cost of analyzing industrial and publicly owned treatment works (POTW) samples;
- . cost comparison between city lab and private labs;
- . estimate of general administrative cost;
- . estimate of cost for an information data management system;

¹ Letter from the State of Indiana Pretreatment Coordinator dated October 27, 1982, regarding pretreatment program development.

- . estimate of overhead cost associated with the operation of the program; and
- . estimate of replacement cost of lab and sampling equipment.

In addition, the revenue estimate should address the following issues:

- . sources of revenues that will fund the program;
- . provisions of the ordinance that will allow the POTW to collect the revenues;
- . identification of the funding system that will be used to collect funds; and
- . costs charged back to the industries must be consistent with 40 CFR 35.929(2)(h).

In addition, the city must compare the program cost with the generated revenues and discuss that cost in the report to the State.

EPA specifically states in 40 CFR 403.8(f)(3) "The POTW shall have sufficient resources and qualified personnel to carry out the authorities and procedures described in paragraphs (f) (1 and 2) of this section." These requirements are explained in greater detail in other EPA documents, but final EPA guides have not been issued on this subject.

To comply with these requirements, the City of Indianapolis developed a scope of work and conducted a review of its organization and funding program. The purpose of this report is to present the findings of those studies. The report is organized into two chapters. Chapter II describes the proposed program organization, and Chapter III describes the proposed funding program. These chapters correlate with Tasks 7 and 6, respectively, and derive significant information from JMM's Monitoring Program Task Report (Project Tasks 9, 11, and 12).

II. PROGRAM ORGANIZATION (Task 7)

The organization of the City of Indianapolis Industrial Surveillance Branch (ISB) was last analyzed in 1975 in a report entitled "Industrial Surveillance Report."¹ The principal objective of that report was to define a program to collect data (primarily on conventional pollutants) to establish an industrial user charge system.

The city implemented the framework outlined in that report and is currently operating the user charge system. As the city focused its attention on priority pollutants and other portions of the pretreatment program outlined in EPA's regulations, the activities, objectives, and funding mechanisms for ISB were reanalyzed.

The objective of the organizational analysis was to determine if new monitoring and enforcement activities defined for the pretreatment program and other management needs identified by the study team would require a reorganization of the ISB or the addition of human resources. The review was also intended to highlight ISB staff training needs with respect to the management and operation of the department.

APPROACH

The review of the organization of the Industrial Surveillance Branch was coordinated with the development of the monitoring, data management, and enforcement systems. As each element of the program was analyzed and defined, the study team examined the existing staffing and organization and identified needs presented by new program elements.

In completing this review, the study team:

- . interviewed the chief of the ISB to obtain his insights into the changes needed to incorporate the EPA categorical standards, improve compliance monitoring of the system, and review the current staff and their existing method of operation;

¹ Howard, Needles, Tamin, and Bergendoff. Industrial Surveillance Report, City of Indianapolis, Department of Public Works, June 1975.

- . reviewed the official job descriptions for each position in the ISB;
- . met with ISB staff to discuss operating issues and training and equipment needs;
- . surveyed the organization and staffing needs of other cities to identify appropriate staffing levels for programs of a similar size;
- . with the city staff, met and interviewed the industrial surveillance managers of programs in St. Louis and Chicago to clarify organization and staffing issues;
- . accompanied field personnel on sampling routes;
- . toured the laboratory and reviewed sampling and handling procedures;
- . developed detailed summaries of 1981 and 1982 sampling and analytical workloads; and
- . worked with James M. Montgomery, Inc., (JMM) to develop the monitoring program and to size the sampling and field staffs for the second half of 1983 and for 1984.

The study team received ongoing cooperation from Mr. Dale Bertelson, Chief of the ISB, and his staff and from the lab director, Mr. Joe Watson.

EXISTING INDUSTRIAL SURVEILLANCE OPERATIONS

As shown in Exhibit 1, the City of Indianapolis Pretreatment Program is currently organized into three supervisory groups which report to the ISB chief. The ISB is set up to control industrial discharges to the system, prevent interference with the treatment plant operation, and prevent problems in the collection system.

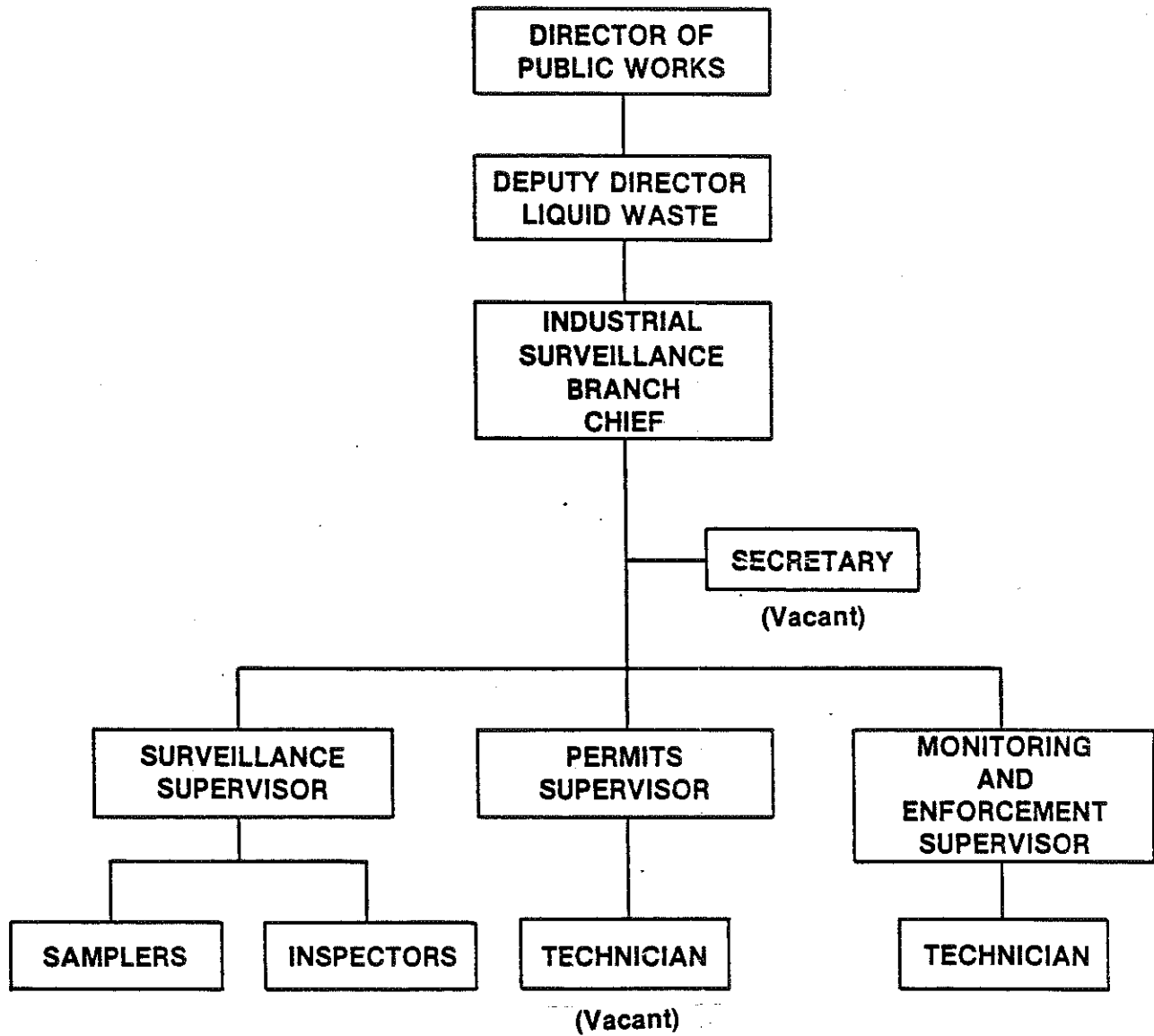
The four sections of the ISB are:

- . Administration;
- . Surveillance;
- . Permits; and
- . Enforcement.

EXHIBIT 1

**CITY OF INDIANAPOLIS
PRETREATMENT PROGRAM
INDUSTRIAL SURVEILLANCE PROGRAM**

EXISTING ORGANIZATION



SOURCE: DPW Chart 6-24-82.

Each section has specific functions and assignments to support the overall branch objectives.

The Administration section's effort is aimed primarily at coordinating the branch's activities, planning, directing special projects, and providing information to the publicly owned treatment works (POTW) management. The Administration group processes the data, prepares laboratory bills, establishes goals for the supervisors, and coordinates the branch's activities with the laboratory, the Deputy Director of Liquid Waste, and the State of Indiana.

The Surveillance group performs all field operations and collects both grab and composite samples of industrial discharges. In addition, the group occasionally samples interceptors and the influent to the plants and provides the field support for responding to emergency calls. In 1982 the Surveillance group collected approximately 1,000 composite and 1,100 grab samples.¹ The Surveillance group currently consists of one supervisor, two samplers, and two inspectors.

The Permits group consists of a supervisor who is responsible for issuing new permits, reviewing permit applications, renewing permits, and collecting permit fees. The city currently has approximately 180 permitted industries and has provided variances to certain industries over the past years. In 1982, the Permits group issued 72 new permits, reissued 25, and negotiated 12 variances.²

The Enforcement group supervisor reviews the permit requirements and the data from the field crew and the lab to determine when individual industries are out of compliance. Procedures are in place to follow up on instances of noncompliance and to work with the industries to achieve compliance with the existing ordinance. A number of instances of noncompliance have been reported in the last year (see summary noncompliance report issued by the ISB), and the ISB is working with industries to develop compliance programs to reduce discharges of pollutants that are above the ordinance levels. In 1982, 251 enforcement actions were taken.³ Historically, the ISB has not pressed compliance issues through the court system.

¹ See Summary of Existing Sampling and Analytical Activities for 1982, City of Indianapolis, Pretreatment Program.

^{2,3} Based on the 1982 ISB Monthly Activities Reports.

In summary, the branch chief is assisted by three supervisors, two samplers, two inspectors, and one technician for a total of 9 staff members.

The existing budget for the branch provides for five additional positions which so far have not been filled due to limited office space and field equipment constraints. The addition of five people would bring the total number in the group to fourteen.

The study team reviewed job descriptions for each position in the ISB. These highlight the purpose of each position, the specific duties and responsibilities, the experience required, the independent actions, working relationships, and working conditions. These descriptions were revised in October 1982 and provide an updated discussion of the activities of the branch.

CONSTRAINTS IN EXISTING SYSTEM

During the review of the current ISB organization and operating procedures, a number of issues were brought to the attention of the study team for redesign in the new program. These items are discussed below.

Field Surveillance and Laboratory Coordination

A key constraint on the proper use of the resources of the surveillance team is the current operating procedures for the laboratory at the Belmont plant. The field collection team currently sets and collects composite samples in the morning and bring the samples to the laboratory by noon for analysis each afternoon. Thus all composite sampling activities or those field sampling efforts that require metals analysis must be completed by noon. This imposes an unnecessary constraint on field operations and reduces the efficiency of the field teams.

In addition, the existing system does not provide for adequate planning and control of ISB samples in the laboratory. The chain of custody procedures needs clarification and documentation. ISB needs more control over the planning of samples through the lab (POTW operating samples take precedence) and more efficient techniques for entering and retrieving laboratory data. (See also the technical review of the laboratory procedures in the Task 9 report.)

The current field operations follow a set rotation of permitted industries and do not provide for "random" compliance checks. Also, the ISB laboratory results are not systematically compared to ordinance limits, historical data, or self-monitoring data.

As the ISB program is redesigned, key issues will include planning of field operations, coordination with the laboratory, and control of laboratory scheduling.

Permitting and Enforcement

The existing permitting and enforcement activities are handled separately by two supervisors. The permits supervisor issues new permits, negotiates permits, visits companies, reviews variance requests, and issues permit renewals. As a part of these activities he is exposed to and deals with companies that are not in compliance with ordinance limits and he becomes familiar with the history of each company's compliance efforts.

As a separate function, the enforcement supervisor focuses on the determination of a violation and initiates enforcement actions. In recent years the majority of enforcement actions have consisted of administrative steps against the permitted discharges.

There appears to be a need for a more systematic approach to permitting, enforcement, collection processing and review of data, and coordination with industry. To maintain a cooperative spirit between the City and industry, the functions of permitting, analysis of compliance data, and enforcement may have to be consolidated so that there is a single contact with industry for permit negotiation, correspondence on compliance history, and the development of a compliance plan and schedule. This will be particularly important as new compliance information and compliance schedules are developed for categorical industries.

A unified approach will also assist the ISB in defining criteria for:

- . variances;
- . sample frequency;
- . special sampling; and
- . violations.

The new system must also be capable of handling EPA new notification, compliance planning, and enforcement procedures for categorical industries. These new requirements are being placed on cities and industry and will increase the need for overall permit and enforcement coordination.

Administration

The administrative activities of the existing branch fall into two broad categories:

- . general administration; and
- . program management.

General administration includes coordination with the state, the Liquid Waste Division, and DPW engineering staff downtown; formulation of policy; program direction; and coordination of the resources of the ISB to achieve the stated goals of the branch.

Program management duties focus on the day-to-day directions given to the ISB office staff. This includes the collection of lab data, entry of data into industry files, and coordination of permitting, enforcement, and special projects.

In recent years the concern for closer coordination of program activities has highlighted the need for a more organized approach to managing the permitting, enforcement, laboratory, and data of the branch. Such an approach would provide for a smooth flow of information and the development of a well-organized working relationship with industry in Indianapolis and the outlying communities served by the City's wastewater treatment plants.

The existing administrative system needs a more quantitative approach to measuring work, setting realistic work production goals, and developing training programs for ISB staff to improve their technical and administrative skills.

PROPOSED OPERATIONS AND STAFFING NEEDS

Over the next several years the ISB will face changing demands in field and office personnel. As EPA's categorical standards are announced and enforced and as the general pretreatment requirements are incorporated into the City ordinance, the ISB staff will be working with industrial dischargers to move everyone into compliance. As shown in Exhibit 2, compliance with the first EPA categorical standard is required by January 1984, while others have effective dates later in 1984 and in 1985.

Therefore, the study team developed a three-phase implementation schedule for the program:

- . Phase I: Program Set-Up June 1983-December 1983
- . Phase II: Compliance Planning January 1984-December 1985
- . Phase III: Ongoing Operations January 1985

The expected activities of the branch for each phase are discussed below and shown in Exhibit 2.

Phase I: Program Set-Up

The ISB has operated a program for controlling industrial dischargers for several years. Starting in July 1983, the ISB will develop software for the new data management system, prepare for implementation in Phase II of the revised sampling and monitoring program developed by JMM, begin to implement new laboratory procedures and training, and will continue to work with metal plating industries toward compliance with EPA categorical standards by January 1984.

Administration

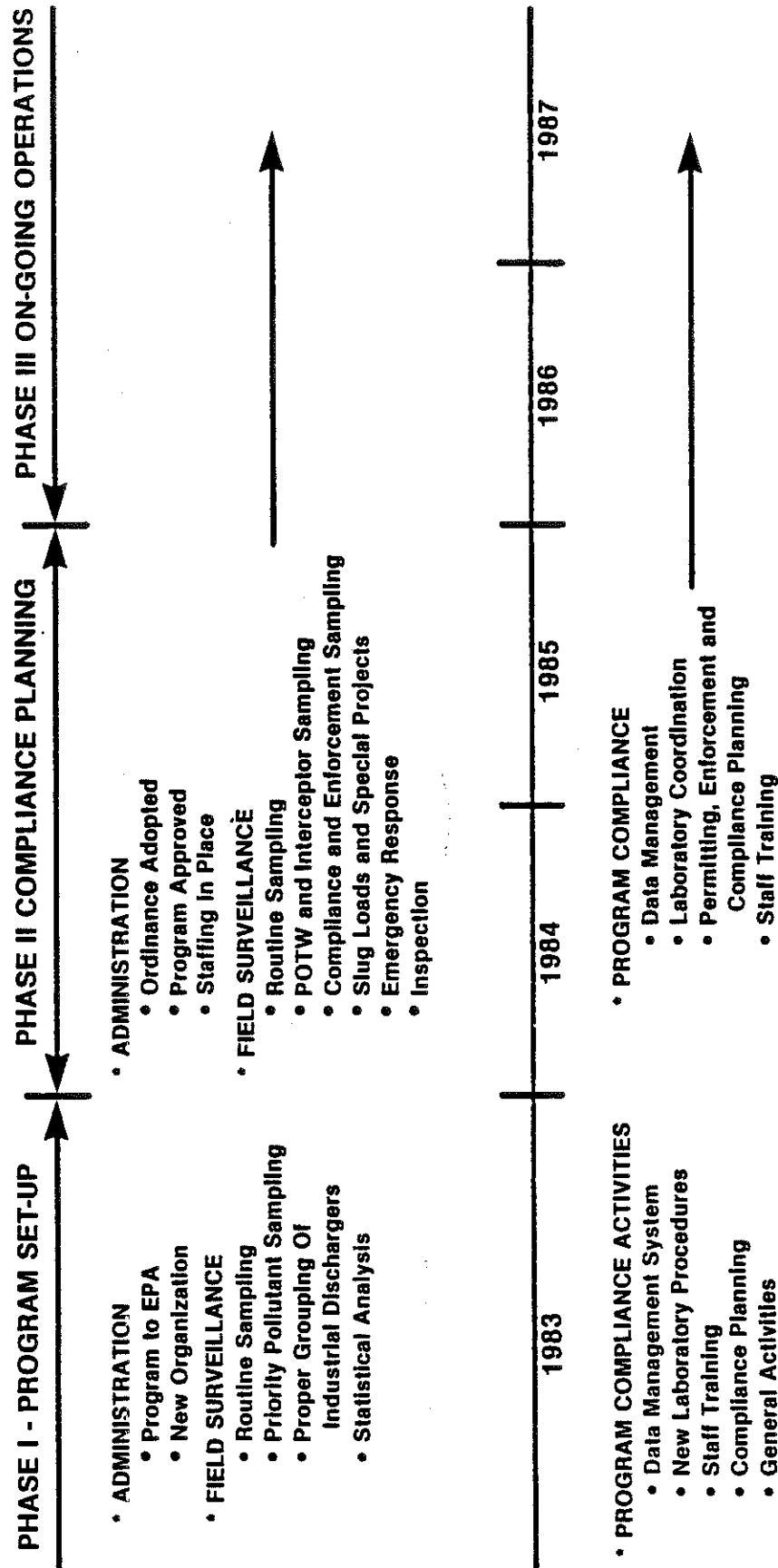
The ISB will submit the proposed Pretreatment Program to EPA and to the state for review and approval. Discussion will be held with the state and EPA to explain portions of the program, and ISB will begin planning to implement the program. Staff changes will also be examined in Phase I along with general program planning and increased communication with industry to explain the new program.

Field Surveillance Activities

In addition to continuation of the existing routine sampling program, a principal activity of the field teams during Phase I will be collection of data to clarify the current discharge levels of priority pollutants from industry. The teams will adopt a systematic approach to obtain additional data on selected industries which will be used to correctly categorize each company on the basis of concentration and total level of pollutants discharged to the collection system. New statistical procedures will be used to determine the Phase II sampling and analytical frequency for each company. This recategorization of the industrial dischargers will form the basis for the revised routine sampling in Phase II.

EXHIBIT 2

CITY OF INDIANAPOLIS PRETREATMENT PROGRAM OVERVIEW OF PROPOSED OPERATION



In addition, the field supervisor will take on additional responsibility for controlling and scheduling ISB samples through the lab. Revised procedures for scheduling, receiving, and entering data for ISB laboratory samples will be implemented in Phase I. ISB and laboratory workloads will be coordinated and changes in staff, equipment, and procedures, as outlined in the laboratory chapter of the Monitoring Program report (Task 9), will be implemented. Successful integration of these changes will require the support of ISB and laboratory management as well as a recognition by the Liquid Waste Division of the importance of timely analysis of routine industrial samples.

Program Compliance Activities

As the field crews collect additional data during the start-up period, the program compliance group will be responsible for taking steps to implement:

- . the data management system;
- . a management training program for ISB staff;
- . compliance planning with industry, particularly with metal platers; and
- . improved systems for communicating with industry.

The implementation of most of these activities should begin in July 1983 and be completed by December 1983 with some activities being carried on into Phase II.

Each item listed above is discussed in detail in the Task 9 and Task 1.11 reports. Therefore only a brief overview of each will be presented here.

- . Data Management. The conceptual design and needs requirements of the computerized data management system are presented in the Task 1.11 report. The city will first contract with a data processing consulting firm to take Peat Marwick's conceptual design and develop a request for proposals which will be sent to software and data processing firms. Companies will submit bids to bring software packages or customized software to Indianapolis which meet the specifications of ISB as defined in the RFP.

It is currently assumed that the ISB data management system will operate on the computer purchased to control the incinerator and that additional equipment for data entry and printing of reports will be purchased by ISB as described in the Task 1.11 report.

The hardware and software for the system should be placed by November 1983 and tested and on-line by January 1984. The timely implementation of the data management system is critical to the operating efficiency of the Surveillance program since it will affect the time required to conduct almost every task in the program.

- . Compliance Planning. In July 1983 the ISB will inform companies of the new ordinance limits and develop compliance schedules for those companies that have discharges above the limits. In addition, the ISB will begin work with EPA and state officials to notify industrial dischargers that fall under EPA's categorical discharge limits of their compliance schedule and under new discharge limits. The first categorical limits go into effect in January 1984. ISB needs to work closely with each company, particularly the smaller companies, to establish realistic compliance schedules.

Several factors complicate this planning process. First, there have been several national legislative attempts to change the local municipalities' requirements for enforcing the categorical standards. Second, final compliance numbers for each category are dependent on the "removal credits" that the city can verify at the wastewater treatment plant for each pollutant.

Therefore, the ISB staff in July will develop compliance schedules based on removal credit information provided by JMM in the Task 4 report, and with an assumption regarding the ultimate fate of EPA's requirements in Congress. The compliance planning activity will also apply to industrial dischargers that exceed the new ordinance limits.

This activity will continue into Phase II, and new industries will be contacted to comply with the EPA categorical standards (see the Task 2 report for the compliance planning schedule).

- . General Activities. We therefore see that in Phase I the ISB staff will begin to implant the program, receive training, establish improved communication systems with industry, and develop the necessary data to properly categorize each company for its revised sampling and analytical requirements which will be defined in a permit amendment which will be reviewed in the fall of 1983 and issued in January 1984.

Also in the Phase I Set-Up the office space requirements of ISB will be defined and action will be taken to accommodate the new data processing, industry communication files, and new management staff.

Peat Marwick estimates that in Phase I the ISB staff will gradually be increased to the levels detailed in Phase II. (See detailed discussion in next section for staffing changes.)

Phase II: Compliance Planning, 1984-1985

As the pretreatment program moves into 1984 and 1985, the complexity of the administrative, field operation, and program compliance responsibilities will increase. By this time the existing industries will have been grouped into categories for new sampling and reporting requirements and the overall level of activity within the branch will increase.

In assessing the staffing and resource requirements in Sections II and III here, two basic options were incorporated. These correspond to Options A-I and A-II of the monitoring analysis alternatives discussed by JMM in their Monitoring Program Report (Chapter 3, Tables 3-8 to 3-11). The options present two levels of sampling and analysis efforts required by the City and the involved industries. These options are referred to as Options I and II for the purposes of this report.

The expected level of activity and staff support required for each of the program functions is discussed below, including a proposed approach for integrating the EPA categorical standards with the new ordinance limits to implement an effective pretreatment program.

Administration

In addition to controlling the overall implementation of the program the branch chief will, in Phase II, finalize program approval with EPA (which may take over 6 months), implement the new ordinance limits, and supervise the integration of the field, laboratory, and compliance activities in the data management system. Also, the new unified billing and self-monitoring reporting system will be implemented with the assistance of the city's user charge personnel and general cost allocation budget, and revenue issues will be reviewed on a regular basis.

The branch chief will also work with the state and EPA on new pretreatment requirements and coordinate activities with the DPW engineering staff that will review plans for industrial pretreatment plants and review enforcement efforts that are appealed to the Director of Public Works.

Field Surveillance

Beginning in January 1984 new routine self-monitoring and sampling requirements will be imposed on industry, and the ISB field surveillance group will have new routines for sampling the industries under their new group designation.

The group designations and the definitions of each group are included in the Task 9 report entitled "Sampling and Monitoring." The overall finding of that report is that the most important industries will be categorized into four groups, and each of those is subdivided into three subgroups to clearly reflect their potential for impacting the wastewater treatment plants.

Specifically, the sampling and monitoring report indicates that ISB field operations will focus on the following areas in 1984:

- . routine sampling;
- . POTW and interceptor sampling;
- . compliance and enforcement sampling;
- . slug loads and special project sampling;
- . emergency response;
- . inspection; and
- . permit coordination.

Of these, the routine sampling will provide the largest workload for the ISB field surveillance group. The impact of the new routine sampling requirements on the ISB staffing and operating procedures will be discussed here, along with a brief discussion of the other tasks facing the field group.

Routine Sampling

As identified in the Task 9 report, the routine sampling program was designed to place the heaviest sampling emphasis on the industries which have the highest potential for impacting the new advanced wastewater treatment plants. The sampling is proposed to be conducted by the City and the industries with

high industrial loading. For program Options I and II, the frequencies for each industry within the groups identified by JMM are as follows:

Annual Sample Frequency
Option I

<u>Group</u>	<u>Description</u>	<u>City</u>	<u>Industry</u>	<u>Total</u>
1	High Industrial Load	10	48	58
2	Moderate Load	12	0	12
3	Small Discharger	4	0	4
4	Non-Process Discharger	once every 5 years	-	-

Annual Sample Frequency
Option II

<u>Group</u>	<u>Description</u>	<u>City</u>	<u>Industry</u>	<u>Total</u>
1	High Industrial Load	10	48	58
2	Moderate Load	4	12	16
3	Small Discharger	4	4	8
4	Non-Process Discharger	once every five years	-	-

We then estimate the total sampling workload based on the number of industries in each group as illustrated in Exhibit 3. The total routine samples estimated for Options I and II are 1,764 and 1,188 respectively. This assumes 34 dischargers in Group 1, 72 in Group 2, and 140 in Group 3.

Peat Marwick and JMM estimate that based on the ISB staff activities in 1982 and on communications with other industrial pretreatment program managers in other cities, approximately 2 hours will be needed for setting and collecting each composite sample. This includes approximately 30 minutes for travel time and 30 minutes for setting each sample.

EXHIBIT 3

INDIANAPOLIS PRETREATMENT PROGRAM 1984 ISB SAMPLING WORKLOAD

ACTIVITY	CREW HOURS PER SAMPLE	OPTION I		OPTION II	
		# SAMPLES	LABOR HOURS	# SAMPLES	LABOR HOURS
*ROUTINE SAMPLING					
-COMPOSITES	4	1764	7056	1188	4752
-GRAB	2	108	216	108	216
*POTW AND INTERCEPTOR SAMPLING	4	200	800	200	800
*ENFORCEMENT SAMPLING	4	50	200	50	200
*SLUDGE AND SPECIAL SAMPLING	2	50	100	50	100
SUBTOTAL			8372		6068
CONTINGENCY (@ 15%)			1256		910
ADMINISTRATION, MAINTENANCE, ETC. (@ 20% OF SUBTOTAL)			1674		1214
TOTAL HOURS REQUIRED			11302		8192
ESTIMATED PERSONNEL REQUIRED (@ 1920HRS/YR)			5.9		4.3
RECOMMENDED PERSONNEL			6.0		5.0

NOTE: *CREW HOURS PER SAMPLE ASSUMES STAFF OF 2 PER CREW.
*FROM TASK 9 REPORT, TABLE 3-10, 3-11, AND 5-4.

The data, assumptions, and methodology used in this exhibit were based upon information provided by the City of Indianapolis and James M. Montgomery. The data and methodologies which are denoted as being provided by other agencies and organizations have not been verified. The achievement of any projection is dependent upon the occurrence of future events that cannot be assured. Therefore, actual results may vary from the projections, and the variations could be material. This information was not prepared for use in connection with any offering of securities.

In addition to the composite samples, approximately 158 grab samples will be taken by the city staff each year to check on the Group 4 industries and for sludge and special sampling needs.¹ As shown in Exhibit 3, sampling frequencies other than those for routine composite are the same for Options I and II.

As additional historical data are collected in the routine sampling program, the city can adjust the program to minimize a collection of data for those industries which are consistently within the ordinance limits and which have a pattern of consistent discharge levels. Those industries which show high variation and occasional excursions over the discharge limits or increase in total load to the plant which could approach those values. Where an impact might be felt at the plant, additional sampling can be included in their annual sampling program.

This dynamic sampling program will allow the city and industry to work closely to minimize unnecessary laboratory and sampling costs while at the same time maximizing the protection of the wastewater treatment plants.

In addition the program encourages the reduction of total pollutant loads to the plant since companies which discharge less than one percent of the expected load of particular pollutant will be sampled according to the frequency of Group 2 rather than of Group 1. Therefore, they would reduce their own sampling and analytical cost.

The proposed data management system for the city will allow the ISB program manager and field supervisor to jointly analyze the historical data and determine whether any changes in sample frequency are needed. In addition the data processing system can be used to identify those industries with consistent discharge levels which can receive less attention and those which have more erratic discharges and need additional sampling to accurately portray their total contribution to the plant.

POTW and Interceptor Sampling

As shown in Exhibit 3, JMM currently estimates that POTW influence samples will be taken at each plant every two weeks

¹ Detailed discussion of the sampling equipment and procedures to be followed by the city sampling crews is included in the Task 9 report and highlights the need for split samples with industry and for local portion samples where necessary.

and that the interceptors will be sampled on a regular basis to identify sources of high pollutant loads to the plant. The city may also implement a take-and-hold program where interceptor samples are collected on a routine basis but are not analyzed unless a problem occurs at a plant. This would also be true at the influent to the plant where daily samples can be taken and would be only analyzed when a problem occurred. (For further discussion see Task 9 report.)

Compliance and Enforcement Sampling

In the general case where an excursion is noted in the routine sampling of an industry, additional compliance and enforcement sampling would occur to pinpoint the violation and to provide necessary data for moving forward with compliance actions. This activity will be particularly important in 1984 when the categorical standards for metal platers are enforced and for determining if new equipment installed to comply with the new ordinance limits and categorical standards are meeting the new effluent limits. The study team estimates that approximately 50 compliance checks will be needed at one sample each, as shown in Exhibit 3.

Slug Loads and Special Project Sampling

The ISB staff occasionally is requested to analyze slug loads which enter the wastewater treatment plant and can upset the operation of the new process. 1982 approximately 40 slug loads were investigated and the same number is projected for 1984 as the industries in town become more familiar with the pretreatment program and the more sophisticated monitoring arrangements that the city has implemented.

In addition random special sampling will be required for spills, investigation of complaints, special analysis of sludge, and other special projects that will occur in the operation of the ISB. The study team has estimated that about 50 of these samples will be necessary.

Emergency Response and Permit Coordination

In addition to their routine sampling assignments in response to emergency situations in the City of Indianapolis, the ISB field team inspects industrial firms for pollutant discharges and coordinates with the permit enforcement group to identify firms that need to be monitored more closely to determine their actual contribution to the system.

Field Staffing

To determine the total staff needed for field surveillance within ISB, Peat Marwick reviewed on an activity-by-activity basis the total number of samples taken and the time needed by sampling crews for each activity. The findings of that review for Options I and II appear in Exhibit 3. As shown, approximately 7,056 and 4,752 crew hours will be needed for routine composite sampling for Options I and II, respectively. The POTW sampling, interceptor sampling, and enforcement sampling are also detailed, with an assumption on the total number of actions in each case to create a total of approximately 8,372 and 6,348 hours of field work for Options I and II.

Additionally, estimates in Exhibit 3 show that the 1984 sampling activity will require approximately 6 and 5 personnel for Options I and II. If the Option I monitoring program is selected, three crews with two people per crew would be needed in the ISB field surveillance section. Option II would require two sampling crews of two people with one person to assist in the simpler sampling activities. One full-time supervisor is recommended to coordinate with the permit enforcement staff and manage the general operations of all field personnel.

A summary of the new organizational arrangements for the ISB will be presented at the end of this discussion.

Laboratory Staffing

As discussed in the Task 9 report, the new sampling program will place increased analytical needs on the city laboratory at Belmont. To meet this increased demand, particularly the demand for additional metals analysis, JMM has indicated that additional laboratory equipment will be needed and laboratory staff should be added to handle the ISB workload. (See Task 9 Report, Table 5-4.)

From the information provided by JMM in Tables 5-2b and 5-4, Peat Marwick developed laboratory labor requirements needed for the pretreatment programs. Exhibits 4 and 5 present these labor needs for Options I and II respectively. A proportion of the ISB analyses needed over the total analyses to be conducted by the lab was applied to the total lab staff (estimated for 1984 in Table 5-2b). The ISB share of the labor accounts for approximately 9.3 personnel in Option I and 8.1 in Option II. The estimated ISB labor costs for the laboratory are also shown in the exhibits and are used in the program cost estimates in Section III of this report.

EXHIBIT 4

INDIANAPOLIS PRETREATMENT PROGRAM 1984 LABORATORY LABOR COSTS — OPTION I

ANALYSIS	AWT PROCESS	ANALYSIS/YEAR		% ISB	TOTAL LAB STAFF		ISB STAFF	ISB LAB COSTS
		ISB	TOTAL		ISB	TOTAL		
BOD	15000	1802	16802	5	4	0.22	0.22	3614
TSS	46000	1732	47732	0	0.5	0.00	0.00	0
NH3	7700	1462	9162	16	1.25	0.20	0.20	3291
0&G	0	1526	1526	100	1.25	1.25	1.25	20625
PH	13000	2172	15172	14	0.5	0.07	0.07	1181
METALS	0	12054	12054	100	2.75	2.75	2.75	45375
PHENOL	0	1462	1462	100	1.25	1.25	1.25	20625
CYANIDE	0	1566	1566	100	1.25	1.25	1.25	20625
GC TEST	0	250	250	100	1	1.00	1.00	16500
OTHER					5.25			
SUBTOTAL					19.0	8.0		131837
QUALITY ASSURANCE					1.0	0		0
SUPERVISION & ADMINISTRATION					3.0	1.3		30783
TOTAL LABOR					23.0	9.3		162619

NOTE: ASSUME AVERAGE LAB STAFF AT \$16500 AND SUPERVISION AT \$24400.
ANALYSIS/YEAR DATA DERIVED FROM JMM TABLE S-4.

The data, assumptions, and methodology used in this exhibit were based upon information provided by the City of Indianapolis and James M. Montgomery. The data and methodologies which are denoted as being provided by other agencies and organizations have not been verified. The achievement of any projection is dependent upon the occurrence of future events that cannot be assured. Therefore, actual results may vary from the projections, and the variations could be material. This information was not prepared for use in connection with any offering of securities.

EXHIBIT 5

INDIANAPOLIS PRETREATMENT PROGRAM 1984 LABORATORY LABOR COSTS — OPTION II

ANALYSIS	AMT PROCESS	ANALYSIS/YEAR		% ISB	TOTAL LAB STAFF		ISB STAFF	ISB LAB COSTS
		ISB	TOTAL		STAFF			
BOD	15000	1428	16428	4	4		0.18	2934
TSS	46000	1410	47410	0	0.5		0.00	0
NH3	7700	1422	9122	16	1.25		0.19	3215
O&G	0	1398	1398	100	1		1.00	16500
pH	13000	1596	14596	11	0.5		0.05	902
METALS	0	11434	11434	100	2.5		2.50	41250
PHENOL	0	1416	1416	100	1		1.00	16500
CYANIDE	0	1424	1424	100	1		1.00	16500
GC TEST	0	250	250	100	1		1.00	16500
OTHER					5.25			
SUBTOTAL					18.0		6.9	114301
QUALITY ASSURANCE					1.0			
SUPERVISION & ADMINISTRATION					3.0		1.2	28171
TOTAL LABOR					22.0		8.1	142473

NOTE: ASSUME AVERAGE LAB STAFF AT \$16500 AND SUPERVISION AT \$24400.
ANALYSIS/YEAR DATA DERIVED FROM JMM TABLE 5-4.

The data, assumptions, and methodology used in this exhibit were based upon information provided by the City of Indianapolis and James M. Montgomery. The data and methodologies which are denoted as being provided by other agencies and organizations have not been verified. The achievement of any projection is dependent upon the occurrence of future events that cannot be assured. Therefore, actual results may vary from the projections, and the variations could be material. This information was not prepared for use in connection with any offering of securities.

In addition to the new staff, the procedures for receiving samples, storing samples, tracking the samples through the laboratory, and reporting information back to the ISB group will be modified. The new procedures are detailed in the Task 9 report and will require additional training of the ISB surveillance teams and the laboratory personnel for proper handling and data entry of information on each sample.

It is currently envisioned that data entry terminals will be placed either in the laboratory or in the ISB office, and the entry of ISB data will be coordinated with the laboratories' new procedures for entering other POTW information into the operations data base.

Peat Marwick proposes that ISB have a close working relationship with a technician in the laboratory whose principal duties would include:

- . establishing chain of custody records for samples;
- . receiving and documenting samples and managing storage; and
- . planning with the compliance supervisor and the field supervisor the volume of ISB samples through the lab and coordinating with the lab staff assigned to the ISB samples.

Program Compliance

The program compliance activities in 1984 and 1985 will include:

- . Data Management; and
- . Permitting Enforcement and Compliance Planning.

As the program moves forward into the compliance planning and enforcement, the compliance group at ISB will coordinate the information received from the field sampling activities, analytical data from the lab, the limits as defined by the ordinance and categorical standards, and other administrative information to ensure that the industries are complying with the requirements of the program. The expected activities in each group in each part of the program management group are described below, along with the staffing needs for each function.

This reorganization of the ISB compliance functions is intended to provide additional continuity in dealing with the new industries that will be complying with the ordinance and categorical standards and in integrating the new data management procedures into the ISB operations.

Data Management

As the data management system is implemented, it will serve the field operations administration and compliance planning for the ISB. Control and operation of the system will rest with the compliance supervisor since a majority of the interaction with the data management system will be for compliance planning and for initiation of enforcement actions.

The Task 1.11 report discusses the use of the computer in permitting, field crew scheduling, data analysis from field and laboratory reports, plotting of historical data, and use of the information in the development of compliance plans and enforcement actions. (See implementation schedule in that report.)

Once the computer hardware is purchased and the software is installed, the ongoing operations of the data processing system would not require the full attention of anyone in the ISB. It is envisioned that the laboratory information will be entered by the ISB lab technician and that training of other ISB staff will be coordinated by the compliance supervisor. Any future changes to the system or the software would be handled by the data processing personnel from the Liquid Waste Division or from the city staff downtown.

Permitting, Enforcement, and Compliance Planning

One of the major proposed changes to the existing ISB activities would be the integration of permitting, enforcement, and compliance planning under the compliance supervisor. In this plan compliance staff will work with their own subset of the industries in Indianapolis to develop compliance schedules and to monitor their progress toward achieving those compliance goals.

The compliance staff will draft permits for industry, re-issue permits, and develop a general understanding of the new ordinance and categorical standards with their identified industries.

To ensure that the compliance staff develops a uniform system for enforcing the city's regulations, the compliance supervisor and the ISB branch chief will make independent checks on the actions taken by the staff. This will ensure that such items as variances in compliance schedules are uniform and that equitable treatment is given to all industries in the city.

The compliance supervisor will coordinate all permitting and enforcement actions and will develop working relationships with industry in Indianapolis. The compliance supervisor will work with the ISB chief and the pretreatment program engineering staff representative from the Department of Public Works to organize information systems and seminars for industries in Indianapolis to understand the new program. The supervisor will review the activities of the compliance staff, coordinate activities with the field supervisor and lab personnel, work with the ISB chief on major enforcement actions, and participate in the planned reviews of pretreatment plants with the Public Works engineering staff.

This integrated approach to compliance with the city's program is intended to encourage a working relationship between the city and industry and to ensure a fair and equitable enforcement of all regulations. The study team estimates that staff for the compliance program would require a supervisor and two compliance officers who would work with the 236 permitted industries in Indianapolis and the other non-processed dischargers who may need information regarding the system. The annual workload estimate for each compliance officer is shown below:

**WORK BREAKDOWN FOR EACH
COMPLIANCE OFFICER**

<u>Task</u>	<u>Hours/Task</u>	<u>Total For Year</u>
. General Maintenance of 118 permits	8	944
- Correspondence		
- Reissue		
- Modification		
. New permits, 20 per year	8	160
. Compliance Planning for 20 Firms	16	320
. Site Visits, 20 Firms	4	80

WORK BREAKDOWN FOR EACH
COMPLIANCE OFFICER
(Continued)

<u>Task</u>	<u>Hours/Task</u>	<u>Total For Year</u>
. Review of Lab Data and Compliance Checks, 4 hours per Week	4	208
. Variance Requests, 5 per Year	16	80
. Enforcement Actions, 5 per Year	16	80
. General Administration, 1 hour per Week		52
		<u>1,924</u>

Phase III: Ongoing Operations

By January 1986, the majority of the industries that may have to install industrial pretreatment facilities will have taken corrective action and in general the industries in Indianapolis will be in compliance with the new ordinance limits and the categorical standards.

At this point, the focus of the ISB activities changes from the compliance planning to an ongoing operations mode which provides for continuing monitoring of industries, identification of new industries, and management of new pretreatments as they arise for the program.

As the program continues, provision will be made for annual reviews of the ISB performance, cost for conducting the program, and effectiveness of industrial sampling. Through this evolution, the city hopes to develop an approach for ensuring protection of the treatment plants, the river, and the sludge at the most reasonable cost to industry and the people of Indianapolis.

ORGANIZATION OPTIONS

As shown earlier in Exhibit 1, the City of Indianapolis's existing Industrial ISB is organized into three groups which report to the surveillance chief. Based on our discussion for the proposed ISB operations, several changes are needed to effectively integrate the data processing system into the program and to improve the compliance planning function of the branch. To finalize the design of the city's organization, Peat Marwick and Mark Battle Associates reviewed the pretreatment programs of 20 other cities and prepared a detailed summary of 11 cities' programs (see Appendix B). In reviewing those programs, the following criteria for reorganizing the Indianapolis Pretreatment Program were identified:

- . encourages cost-effective use of manpower;
- . encourages an easy flow of information between the groups;
- . identifies clear lines of responsibility for each program area;
- . provides mechanism for semi-annual review of each employer's performance;
- . improves relationship with industry;
- . provides proper information to state and EPA officials;
- . works well with the Department of Public Works engineering staff downtown; and
- . provides timely information to the operating personnel of the Liquid Waste Division.

Within the review of other cities' programs, the organizational review included an analysis of their estimated staffing and budget needs, and that information was taken into account in the design of the Indianapolis program.

After reviewing the program needs of the City of Indianapolis and the organizational structures that have been developed by other municipalities for the pretreatment programs,

the study team identified three basic options for program organization. Those include:

- . Option A: all functions separate;
- . Option B: joint field and laboratory; and
- . Option C: joint field and laboratory and joint permitting and enforcement.

For Option A, the four major functions of the surveillance branch are placed in separate control, with all the supervisors reporting to the branch chief (See Exhibit 6). In some larger surveillance organizations which maintain a separate industrial surveillance laboratory, this arrangement places the supervisors responsible for each function on an equal status. However, for the City of Indianapolis where direct control of the laboratory will remain with the laboratory supervisor (who will not report to the branch chief). That assignment can be more closely associated with the field operations for sampling coordination and scheduling, as shown in Option B.

In Option B, the field and laboratory functions are operated and closely coordinated with the information being provided to the permitting and enforcement supervisors. In this option the permitting supervisor is responsible for permit applications and renewals and for processing all variance and permit-related material. The enforcement supervisor is responsible for comparing the permit limits to the field samples and for taking enforcement or compliance actions where necessary.

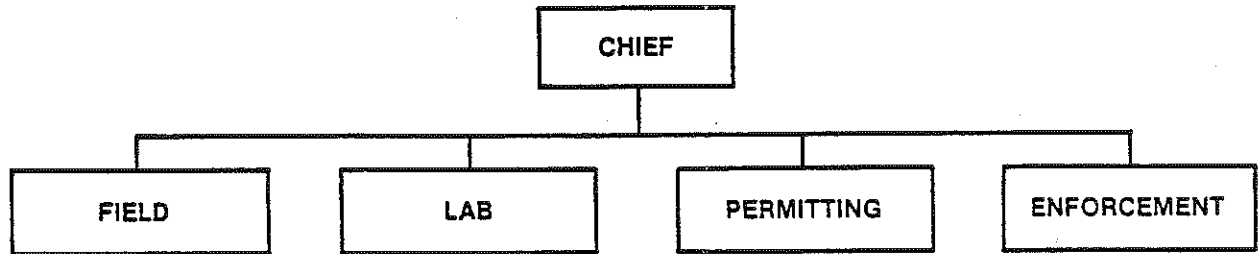
One problem that arises with the Option B organization arrangements is that the industries' working relationship with the city is complicated by the need to discuss operating matters with field, permitting, and enforcement personnel. For some larger municipalities, keeping the permitting and enforcement functions separate ensures a strict level of independence and can be appropriate where there are so many industries that it is not possible to develop a working relationship with the dischargers.

In Option C, joint field and laboratory efforts are balanced by a joint permitting and enforcement program. These options allow the development of a close working relationship and development of compliance actions. In this option the permitting and enforcement function can be carried out by a single compliance officer who works with the discharger from the time of permit application, through permit renewal, through the review of laboratory information and into compliance actions and compliance schedules, where necessary. If an industry reaches the enforcement step and administrative or court action is

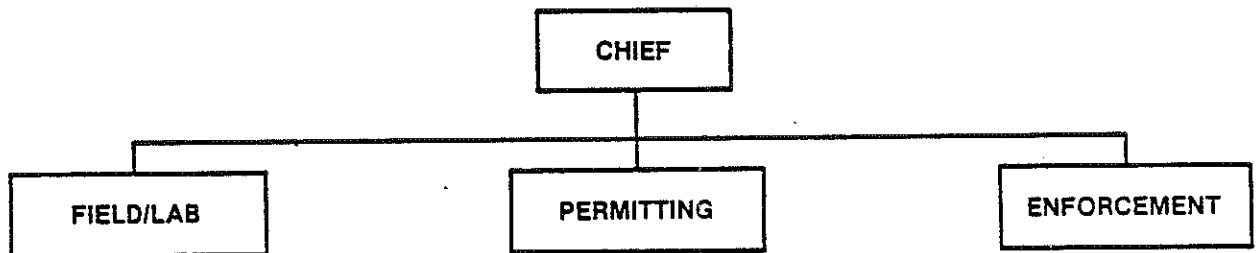
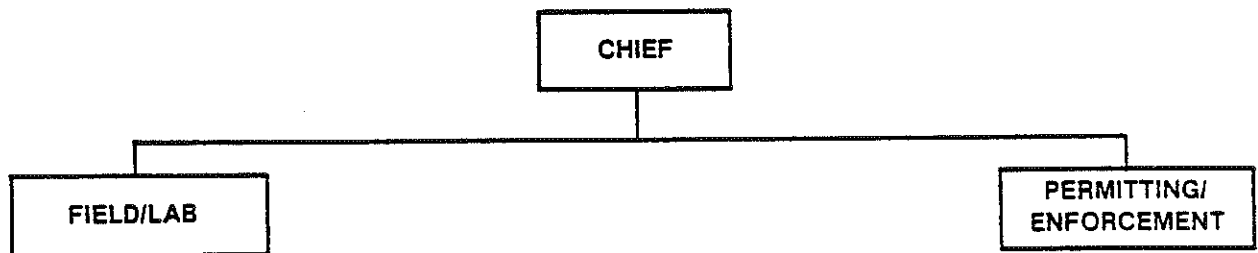
CITY OF INDIANAPOLIS
PRETREATMENT PROGRAM

ORGANIZATIONAL OPTIONS

OPTION A - ALL FUNCTIONS SEPARATE



OPTION B - JOINT FIELD AND LAB

OPTION C - JOINT FIELD AND LAB
JOINT PERMITTING AND ENFORCEMENT

required, the same officer that has been working with the company throughout will be able to more clearly understand the company's position and the city's need for control and can work with the industry to achieve a cost-effective solution. For those cases that would move to administrative or judicial enforcement activities, the compliance officer would then work with the branch chief and with the Department of Public Works engineering staff to bring final action and provide well documented information that highlights the city's basis for controlling the industry.

Overall, due to the laboratory arrangement and to the need to establish an ongoing constructive relationship with the industries in Indianapolis, the general organization and arrangement in Option C provides administrative and operating benefits for the surveillance branch.

RECOMMENDED ORGANIZATION

As shown in Exhibit 7, the study team work recommends an ISB organization which integrates the field and laboratory functions in one group and the compliance functions in a second.

Under this arrangement the branch chief will be responsible for planning, policy, and procedure development and will work with the city billing and collection group downtown to develop cost, billing information, and budgets for the branch. In addition, all coordination with the Department of Public Works engineering staff for planning reviews and for technical analysis of enforcement actions will be handled through the branch chief. The chief will also maintain working relationships with EPA in the State of Indiana to update the pre-treatment program as changes occur and as the needs of the treatment plants and the industrial community in Indianapolis change.

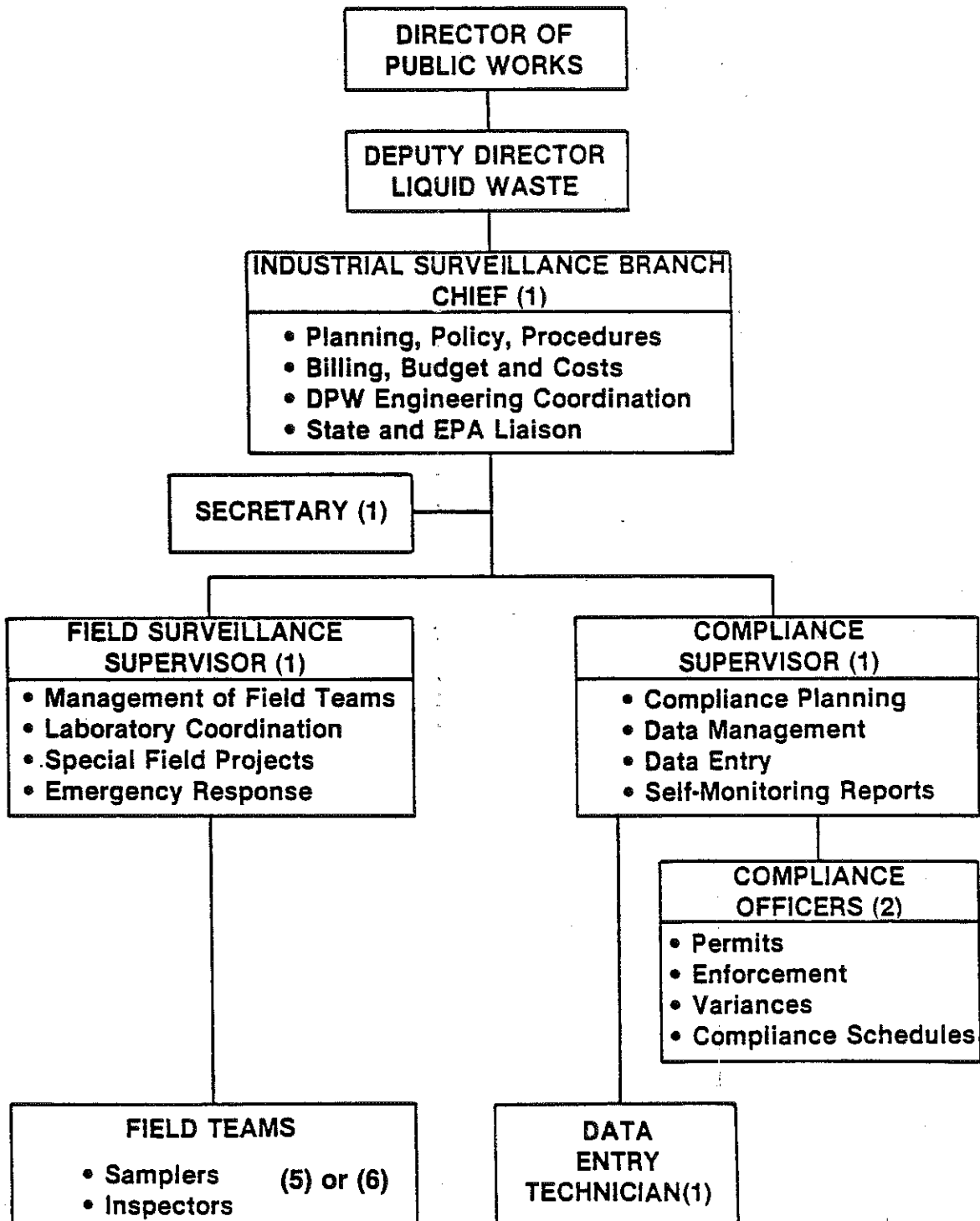
The branch will have one secretary will be responsible for all correspondence and filing of information and for maintaining surveillance files.

The field surveillance supervisor will have direct management responsibility for the six members of the field and will work with the Belmont laboratory director to coordinate sample workloads with the laboratory staff. In addition, the supervisor will respond to emergency situations and be responsible for management and maintenance of all safety equipment and will act under the direction of the branch chief on all field projects.

EXHIBIT 7

CITY OF INDIANAPOLIS PRETREATMENT PROGRAM

PROPOSED ORGANIZATION



The compliance supervisor will be responsible for the general compliance planning and data management functions and will coordinate data entry and self monitoring reports for the branch. He or she will supervise the data entry technician and will be responsible for ensuring that the laboratory information is properly entered into the ISB data management system and be made available to the compliance officers.

The compliance officers will report to the supervisor and will work with the supervisor in reviewing the permits and sampling program historical laboratory data to manage a dynamic sampling and analytical program that places increased emphasis on those industries that are repeatedly in violation of the ordinance and categorical standards. This will reduce sampling and analytical costs for those industries that demonstrate repeated compliance with the established standards.

This will be a major new function within the compliance group and will require continued review of all new information in comparison with historical data.

The compliance officers will have day-to-day responsibility for permitting industries, renewing permits, developing compliance schedules, negotiating variances, and taking enforcement actions. Each officer will be responsible for a certain portion of the industries in Indianapolis. The division of responsibility could be by industry category or geography based on review of the distribution of the industries in the community.

In the next two years the compliance officers will have a great deal of responsibility for developing compliance schedules for the industries that are not in compliance with the new ordinance values or whose discharge exceeds the EPA categorical standards for their industry.

The study team believes that a single compliance officer can work with an individual company, inform it of the discharge requirements, assist in organizing its resources to analyze options for meeting new ordinance limits, and work with the industry in reviewing results of field analyses which indicate compliance with the ordinance or highlight the need for improved operations to reduce discharges.

In general this proposed organization provides a cost-effective approach for implementing the new data management system and sampling program and increases the total Industrial Surveillance Branch from its current level of nine employees to a proposed level of thirteen. Increased staff will place strains on the current ISB office space, and steps are being taken to relocate the ISB staff to larger quarters.

The increase in the ISB staff can be implemented during 1983 as the data management system is brought on line and as the field and compliance officers understand their new responsibilities.

MANAGEMENT TRAINING SCHEDULE

As highlighted earlier in Exhibit 2, the implementation of the Indianapolis pretreatment program will begin in July 1983 and continue through 1984 and 1985 until an ongoing operation is established in January 1986. Throughout this period, administrative, field surveillance, and program compliance staff will require administrative and technical training to implement the program. To improve management of the program and ensure that the system is updated and operated in a cost-effective manner, the administrative staff could receive training in expansion of their skills in the following areas:

- . program planning and scheduling;
- . employee performance evaluation;
- . systems for keeping current with state and EPA regulations; and
- . administrative aspects of the data management system.

The field surveillance group will also need training on management and technical issues. Technical information on improved sampling techniques and laboratory procedures was presented in the Task 9 report by JMM, and it is proposed that this technical training be supported by management training in the following areas:

- . management of field teams;
- . techniques for establishing a proper chain of custody for samples which may be used to support a court enforcement action;
- . safety training for emergency situations through the use of safety equipment procedures for reacting to certain emergency conditions and training and first aid.

It is important for the field personnel to understand the general mission of the ISB and to be given an opportunity to review the flow of information and objectives of the compliance supervisor and compliance officers. This would not be an in-depth study of the entire permitting and enforcement system

but would be an overview of those functions to provide the field personnel with greater insight into how their activities fit into the overall functioning of the ISB. The reorganization of the compliance section will require training of both the supervisor and compliance officers in the revised procedures for developing an ongoing compliance relationship with the industries and for implementing the dynamic sampling program discussed previously.

The compliance supervisor will need training in the city's enforcement system and the procedures to take against industries which violate the new ordinance limits, from notification through administrative and judicial enforcement.

In addition, the compliance supervisor will need training in the data management system and the use of that system by the compliance officers. The procedure for screening violations and taking enforcement action will be the responsibility of the compliance supervisor and compliance officers. The use of historical data and current data to make those decisions should be reviewed with each group.

The compliance supervisor will need to work with the branch chief in developing and designing the data management system. He or she will need to be trained in the basic capabilities of the system.

The compliance officers will operate under the new proposed compliance planning system and will work with individual companies starting in the permitting phase and progressing through the enforcement and compliance scheduling steps. The compliance officers will need basic training on the data management system, but initially they can rely on the compliance supervisor and the branch chief for reports which will allow them to take compliance actions.

The statistical routines used to establish significant violations and minor violations will be reviewed with the compliance officers along with an ongoing training program which allows them to update their permits to reflect new EPA or state requirements.

III. PROGRAM FUNDING (Task 6)

As noted earlier, the State of Indiana and the EPA have requirements for ensuring that a pretreatment program is adequately funded. The city is required to develop an estimate for running the pretreatment program, identify cost centers, and to examine options for allocating these costs to the industrial users.

This allocation will be integrated into existing city user charge and surcharge systems and should equitably allocate the cost for the industrial surveillance systems to the industries which contribute the greatest portion of pollutants.

The magnitude of the program cost estimate is a function of the monitoring and enforcement requirements, as defined in the Task 9 report. Although the city does not incur costs for samples taken and analyzed by industry, the study team reviewed the industry's direct sampling and analytical costs when examining various options for defining the city's involvement in the collection and analysis of samples.

Therefore, the objective of Task 6 was to develop a program which would effectively monitor and control the industrial dischargers, estimate the cost for that program, and design an equitable funding arrangement to support the effort.

APPROACH

The study team worked with the Industrial ISB and the City of Indianapolis Chamber of Commerce in developing the cost estimate and allocation formulas for the pretreatment program. As part of that effort, we completed the following subtasks:

- . collected 1982 budget and actual cost information for the ISB;
- . examined the sources of revenue for supporting the program in 1982 including an analysis of costs borne by specific industries;
- . reviewed the industry billing formulas for lab and sampling data and revenues received from the ISB surcharge;
- . reviewed by company the 1982 annual cost for the laboratory and sampling charges;

- . examined the ISB billing and collection system as it relates to the city's main computer function and the Indianapolis Water Company;
- . discussed with the Chamber of Commerce the allocation options for supporting the ISB and received comments on draft materials from the Chamber;
- . developed the total cost of the proposed program with the assistance of option ISB personnel;
- . reviewed budget and cost allocation data from eleven other cities; and
- . reviewed the program cost and allocation options in a draft report to the ISB chief and worked with the city to select the final proposed program to be included in the program plan.

EXISTING BUDGET AND SOURCES OF REVENUE

The ISB currently develops a proposed budget for each year of operation and submits that as part of the Liquid Waste Division overall budget. As shown in Exhibit 8, the 1982 budget was \$281,077 and the 1983 budget is \$331,055. The cost breakdown for the budget is shown in the exhibit, with the major increases in cost due to the need for more equipment in 1983 and changes in the central garage billings, overtime, office equipment, and other contractual services. The difference in the 1982 ISB budget and expended items for ISB are primarily due to the constraints of existing office space which resulted in five positions being vacant for the year.

The total actual expenditures for all surveillance activities in 1982 are estimated at \$280,000. This includes all ISB costs (\$193,000) and the costs that the laboratory incurred for

EXHIBIT 8

CITY INDIANAPOLIS PRETREATMENT PROGRAM INDUSTRIAL SURVEILLANCE BRANCH BUDGETS

INDUSTRIAL SURVEILLANCE 12-01

char.	obj.	Description	1982 Budget	1983 Budget
10	010	Regular Salaries	0.	210,554.
10	020	Weekly Salaries	210,999.	0.
10	030	Overtime	0.	3,100.
10	070	Merit Account	0.	0.
10	270	Health Insurance	6,866.	9,480.
10	272	Workman's Compensation	0.	0.
10	370	PERF	14,770.	14,956.
10	371	Social Security	14,137.	14,315.
10	372	Unemployment Insurance	1,055.	380.
		Sub Total	247,827.	252,785.
21	110	Postage & Freight	0.	800.
21	112	Travel & Mileage	1,000.	1,000.
21	130	Instruction/Tuition	500.	1,000.
21	140	Advertising & Printing	0.	500.
21	150	Office Equipment Repair	500.	500.
21	163	Central Garage Billings	17,500.	30,000.
21	169	Other Contractual Services	10,000.	16,950.
21	320	Subscriptions and Dues	250.	500.
		Sub Total	29,750.	50,300.
22	211	General Office Supplies	0.	950.
22	229	Other Supplies	2,000.	2,000.
22	250	Repair Parts	1,000.	1,000.
22	260	Implements & Tools	500.	500.
		Sub Total	3,500.	4,450.
50	640	Office Equipment	0.	2,570.
50	641	Office Furniture	0.	5,000.
50	642	Equipment	0.	15,700.
50	644	Books/Library Purchases	0.	250.
		Sub Total	0.	23,520.
		Total	281,077.	331,055.

SOURCE: ISB Budget Package.

analyzing the industrial sample analysis (estimated at approximately \$87,000).^{1,2}

Existing Revenues

The City of Indianapolis currently supports the Liquid Waste Division and the Surveillance Program through a series of collections and charges including:

- . user charges to both residential and industrial users;
- . surcharge to industrial users for high-strength conventional pollutants;
- . ISB surcharge to industrial users;
- . lab and sampling charges to industries which are sampled by the city; and
- . permit fees to industrial permitted industries.

Of these charges, the ISB controls the ISB surcharge, the lab charges, and the permit fees. In 1982, approximately \$223,000,³ was collected from the surcharge to industry to maintain the ISB. The surcharge was set at 3.6 cents per thousand gallons of industrial flow. This charge had formerly been set at 5 cents per thousand gallons but was adjusted when the system for collecting additional revenues on a per sample basis was implemented.

1 Approximately 4 person-years of direct laboratory staff time was devoted to ISB work primarily to analyze industry samples for oil and grease, ph, heavy metals, and organics (4 x 16,000 = \$64,000). Adding a 20 percent factor for management at \$13,000, plus material and supplies at \$10,000, gives a total of \$87,000.

2 A check on the above lab estimate was made based on a labor percentage of the portion of the total 1982 lab budget of \$342,000 which was devoted to ISB samples. If we assume 4 person-years out of 14 were assigned to ISB work, that amounts to 25 percent of the lab load; 25 percent of @ \$342,000 is approximately \$85,500, which checks with the \$87,000.

3 Source ISB estimate obtained from city user charge office.

In addition ISB estimated that approximately \$51,000 was collected in 1982 for sampling and analytical work performed by the city. Finally, approximately \$100 was collected in permit fees in 1982. This would bring the revenue stream for 1982 to approximately \$274,000. As noted earlier, the city estimated ISB expenses at approximately \$193,000 and the lab expenses at approximately \$87,000, for a program cost of approximately \$280,000. Therefore, the revenues in 1982 very closely matched the costs for the program. It should be noted that although revenues and expenses matched, it appears that high flow industries with few pollutants paid an inordinate share of the ISB costs due to the per-gallon charge.

Using this information as a starting point, the study team analyzed the specific types of industry that were contributing the largest portions to the ISB surcharge account and to the sampling revenues. They then developed a cost estimate for the expanded ISB program and examined options for increasing revenues to cover these costs.

PROPOSED PROGRAM COST

The State of Indiana requires an estimate of the expected costs for operating the pretreatment program. As shown in Exhibit 9, the estimate should define labor and equipment costs for both the ISB and the laboratory.

As noted previously in Section II, two program options were defined for the monitoring program:

- . Option I: Full Analysis; and
- . Option II: Priority Analysis.

To develop the labor and equipment budgets for both program options, Peat Marwick and MBA worked with JMM to:

- . develop 1984 samples and analytical program (Task 9 report);
- . estimate sampling workload (Exhibit 3);
- . estimate laboratory staff needs (Exhibits 4 and 5);
- . define ISB organization and staffing plan (Exhibit 7);
- . review ISB existing budget (Exhibit 8); and
- . develop 1984 proposed ISB and laboratory costs for the program options.

EXHIBIT 9

**CITY OF INDIANAPOLIS
PRETREATMENT PROGRAM
STATE OF INDIANA PROGRAM COST FORM**

TASK	Supervisor	Lab Tech	Field Tech	Clerk	Other
1. Collecting Industrial Samples					
2. Collecting POTW Samples					
3. Analyzing Industrial Samples					
4. Analyzing POTW Samples					
5. Inspecting Industrial Dischargers					
6. Reviewing IU Self-Monitoring Reports					
7. Reviewing Facility Plans					
8. Reviewing IU permit Applications					
9. Issuing Industrial Permits					
10. Enforcement					
11. Other					
Total Work-Hours per Year					
Hourly Wage of Employee					
Total Salary Costs					

COST OF EQUIPMENT AND SUPPLIES

1. Sampling Equipment
2. Lab Equipment
3. Replacement Cost, Equipment (Est.)
4. Office Supplies
5. Other

TOTAL

TOTAL PROGRAM COST

Salary
+
Equipment
=

TOTAL COST

The complete cost analysis for Option I and Option II are shown in Exhibit 10. For 1984 the labor costs for ISB were defined for administration, field surveillance, and compliance planning. The field surveillance labor costs are derived from Exhibit 3. The annual salary estimates are the 1983 salary with a 5 percent cost of living and merit raise plus 20 percent for fringe benefits. The salaries for new positions, compliance supervision, and data entry were estimated based on city personnel categories and existing salary ranges.

The ISB's other direct costs include routine operating costs plus \$30,000 for data processing terminals and \$5,700 for additional field equipment.

The laboratory staff costs devoted to ISB are based on the staff needs defined in Exhibits 4 and 5 and include analytical and supervisory staff time. The laboratory materials for ISB work are a percentage of the total lab materials and are based on the percentage of lab staff devoted to ISB work ($\$48,000 \times 8.3/19 = \$21,000$).

As shown in Exhibit 10, the total cost for surveillance and laboratory activities is \$591,015 for Option I and \$548,174 for Option II.

MANAGEMENT ANALYSIS OF PROGRAM COSTS

As shown in Exhibits 11 and 12, the study team reviewed each program cost which was presented in Exhibit 10 and determined what portion of each cost was attributable to functional areas of the pretreatment program. Costs were allocated to these functional areas (or cost centers) which were then used to calculate unit costs revenue generation options. The functions addressed are:

- . general administration;
- . compliance planning;
- . field surveillance; and
- . laboratory analysis.

Labor costs for the branch chief and secretary are devoted exclusively to the general administrative category while the cost for the remainder of the staff was allocated to each of the areas based on the amount of time that they would be spending in that role.

EXHIBIT 10

INDIANAPOLIS PRETREATMENT PROGRAM ESTIMATE OF 1984 PROGRAM COSTS

COST ITEM	OPTION I	OPTION II
*ISB LABOR & BENEFITS		
-CHIEF/SECRE	50104	50104
-FIELD SUPT	24459	24459
-FIELD STAFF	107730	90090
-COMPL. SUPT	24459	24459
-COMPL. STAFF	45770	45770
-DATA ENTRY	15763	15763
*ISB OTHER COST		
-OPERATING	40000	35000
-SUPPLIES	5000	5000
-EQUIPMENT	5000	5000
-DATA PROCESS.	30000	30000
-FIELD EQUIP.	5700	5700
ISB SUBTOTAL	353985	331345
*LABORATORY		
-LABOR	131837	114301
-SUPERVISION	32493	29828
-MATERIALS	21000	21000
-NEW EQUIP.	51700	51700
LAB SUBTOTAL	237030	216829
TOTAL COSTS	591015	548174

The data, assumptions, and methodology used in this exhibit were based upon information provided by the City of Indianapolis and James M. Montgomery. The data and methodologies which are denoted as being provided by other agencies and organizations have not been verified. The achievement of any projection is dependent upon the occurrence of future events that cannot be assured. Therefore, actual results may vary from the projections, and the variations could be material. This information was not prepared for use in connection with any offering of securities.

EXHIBIT 11

INDIANAPOLIS PRETREATMENT PROGRAM MANAGEMENT ANALYSIS OF 1984 PROGRAM COSTS — OPTION I

COST ITEM	TOTAL COST(1984)	ALLOCATED COST(1984)	GEN ADM %	COMPLI %	FIELD %	LAB TOTAL	BOD/SS	NH3	LAB ANALYSTS (\$) O&G	PH	METALS	PHENOLS	CN	GC
*ISB LABOR & BENEFITS														
-CHIEF/SECRETARY	50104	50104	100	50104	0	0								
-FIELD SUPT	24459	24459	80	19567	0	20	4891.8							
-FIELD STAFF	107730	107730	10	10773	0	90	96957							
-COMPL. SUPT	24459	24459	20	4891.8	80	19567	0							
-COMPL. STAFF	45770	45770	20	9154	80	36616	0							
-DATA ENTRY	15763	15763	30	4728.9	70	11034	0							
*ISB OTHER COSTS														
-OPERATING	40000	40000	20	8000	0	80	32000							
-SUPPLIES	5000	5000	50	2500	0	50	2500							
-EQUIPMENT	5000	5000	100	5000	0	0	0							
-DATA PROCESS.	30000	30000	100	30000	0	0	0							
-FIELD EQUIP.	5700	5700	0	0	0	100	5700							
ISB SUBTOTAL	353985	329985												
*LABORATORY														
-LABOR	131837	131837	0	0	0	0	0	131836	3614	3291	20625	1181	45375	20625
-SUPERVISION	32493	32493	0	0	0	0	0	32493	4920	1949	16109	3139	16109	1949
-MATERIALS	21000	21000	0	0	0	0	0	21000	3180	1259	10483	2029	10483	1259
-NEW EQUIP.	51700	10340	0	0	0	0	0	10340	1566	620	654	999	5152	620
LAB SUBTOTAL	237030	195670	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL COSTS	591015	525655	120719	67217	142049	1195669	13279.9	7119.14	24664	7348.18	77179.5	24453.1	24795.8	16029.4
ALLOC UNIT						ANALYS	2934	1162	1226	1872	9654	1162	1866	100
UNIT COST						\$/	4.53	6.13	20.12	3.93	7.99	21.04	19.59	16A.29

NOTE:

*LABORATORY LABOR COSTS ARE ALLOCATED ACCORDING TO EXHIBITS 4 AND 5; SUPV., MATERIAL, & EQUIP. COSTS ARE ALLOCATED ACCORDING TO SHARE OF ROUTINE ANALYSES (JMM TABLE 5-4).

The data, assumptions, and methodology used in this exhibit were based upon information provided by the City of Indianapolis and James H. Montgomery. The data and methodologies which are denoted as being provided by other agencies and organizations have not been verified. The achievement of any projection is dependent upon the occurrence of future events that cannot be assured. Therefore, actual results may vary from the projections, and the variations could be material. This information was not prepared for use in connection with any offering of securities.

EXHIBIT 12

INDIANAPOLIS PRETREATMENT PROGRAM MANAGEMENT ANALYSIS OF 1984 PROGRAM COSTS — OPTION II

COST ITEM	TOTAL COST (1984)	ALLOCATED COST (1984)	GEN ADM %	COMPLI %	FIELD %	LAB TOTAL	BOD/SS	NH3	LAB ANALYSIS ORG	pH	METALS	PHENOLS	CN	GC
*ISB LABOR & BENEFITS														
-CHIEF/SECURE	50104	50104	100	50104	0	0								
-FIELD SUPT	24459	24459	80	19567	0	20	4891.8							
-FIELD STAFF	90090	90090	100	90090	0	90	81081							
-COMPL. SUPT	24459	24459	20	4891.8	80	19567	0							
-COMPL. STAFF	45770	45770	20	9154	80	36616	0							
-DATA ENTRY	15763	15763	30	4728.9	70	11034	0							
*ISB OTHER COSTS														
-OPERATING	35000	35000	20	7000	0	80	28000							
-SUPPLIES	5000	5000	50	2500	0	50	2500							
-EQUIPMENT	5000	5000	100	5000	0	0								
-DATA PROCESS.	30000	30000	100	30000	0	0								
-FIELD EQUIP.	5700	5700	0	0	0	100	5700							
ISB SUBTOTAL	331345	307345												
*LABORATORY														
-LABOR	114301	114301	0	0	0	0								
-SUPERVISION	29828	29828	0	0	0	0								
-MATERIALS	21000	21000	0	0	0	0								
-NEW EQUIP.	51700	10340	0	0	0	0								
LAB SUBTOTAL	216829	175469												
TOTAL COSTS	548174	482814	117955	67217	122173	1175469	10326	7222	20421	5530	73512	20485	20514	16857
ALLOC UNIT						ANALYS	2238	1122	1098	1296	9034	1116	1124	100
UNIT COST						\$/	4.88	6.44	10.60	4.27	0.14	10.36	10.25	168.57

NOTE:

*LABORATORY LABOR COSTS ARE ALLOCATED ACCORDING TO EXHIBITS 4 AND 5; SUPV., MATERIAL, EQUIP. COSTS ARE ALLOCATED ACCORDING TO SHARE OF ROUTINE ANALYSES (JMM TABLE 5-4).

The data, assumptions, and methodology used in this exhibit were based upon information provided by the City of Indianapolis and James M. Montgomery. The data and methodologies which are denoted as being provided by other agencies and organizations have not been verified. The achievement of any projection is dependent upon the occurrence of future events that cannot be assured. Therefore, actual results may vary from the projections, and the variations could be material. This information was not prepared for use in connection with any offering of securities.

The other direct costs for the ISB were allocated to the general administrative category and to field operations.

The field equipment proposed by JMM will be attributable to the field group; therefore, that cost is shown under the field surveillance column, and a portion of the cost is recovered each year.

The laboratory labor category presents an interesting challenge for allocating costs to the individual types of the analyses being run. The basis for the laboratory allocation was the staffing plan shown in Exhibits 4 and 5 which identifies labor years of laboratory staff being devoted to the analysis of industrial samples. In addition, unit costs for analyses were calculated and are used as a revenue option in the following section.

The supervisors' materials and new equipment for the laboratory were also allocated to the types of analyses based on the relative number of analyses run. It should be noted that although the new equipment is estimated at \$51,700 for 1984 operation, only one-fifth of that cost was allocated for recovery by the 1984 revenue program to account for depreciation over a five year period.

As shown by the totals, the 1984 allocated program costs for both options can be broken down as follows:

	<u>Option I</u>	<u>Option II</u>
. General administration	120,719	117,955
. Compliance planning	67,217	67,217
. Field surveillance	142,049	122,173
. Laboratory cost	<u>195,669</u>	<u>175,469</u>
TOTAL	525,654	482,814

The next task facing the team was to determine how the city could most equitably collect these funds from those industries which were responsible for generating each cost category.

COST ALLOCATION AND REVENUE OPTIONS

As mentioned earlier, the EPA and the State of Indiana require that the city have sufficient resources to carry out the

pretreatment program and that sufficient revenue be generated on the program operation.¹ (See Exhibit 13).

The allocation of pretreatment program cost to specific functional areas and the development of revenue programs to fund those areas are designed to allocate the cost of the program equitably to the industrial dischargers. In developing the revenue program, Peat Marwick considered the following criteria:

- . administrative Feasibility;
- . proportion to contribution;
- . understanding by industry;
- . encouragement of recycled and wastestream reduction;
and
- . implementation within the city's legal and staffing restrictions.

In developing the cost allocation and revenue alternatives, Peat Marwick and MBA reviewed the systems currently being used by communities which have completed their pretreatment programs. (See Exhibit 14). One west coast city collects the entire cost of its pretreatment program through permit fees. Other programs are supported through flow surcharges, sampling and analytical charges, and the general fund of the wastewater utility. Based on the review of these materials and the criteria stated above, Peat Marwick developed five alternatives for funding the Indianapolis pretreatment program. The options are shown in Exhibit 15 and represent a spectrum of alternatives from the most administratively simple to the most administratively complex.

Alternative A: 100 Percent to Permits

Alternative A is to collect an annual fee for each permitted industry in the city. While this is an administratively simple approach, it does not equitably allocate the true cost for operating the pretreatment program in that significant pollutant dischargers would pay the same as very small industries. Since Indianapolis has a broad spectrum of industry with significant variations in flow and in pollutant contribution, this alternative would be difficult to implement.

¹ See State of Indiana letter dated October 27, 1982, entitled "Pretreatment Program Development", p. 8. See also 40 CFR 35.929 (2)(h).

EXHIBIT 13**CITY OF INDIANAPOLIS
PRETREATMENT PROGRAM
STATE OF INDIANA PROGRAM REVENUE FORM****Expected Sources of Revenue**

Source	Amount	# of IUs	Total
1. Application fees for Discharge Permits			
2. Application fees for Construction Permits			
3. Fees charged to industries, monitoring			
4. Fees charged to industries, inspections			
5. Surcharges for high strength waste			
6. Fees for filing appeals			
7. Fines and penalties for non-compliance			
8. Other sources			
Total			

EXHIBIT 14
CITY OF INDIANAPOLIS PRETREATMENT PROGRAM
COMPARISON TO OTHER CITIES' PROGRAMS¹

		Population (1975)	Lab	Staff Field	Adm	Total	ISB Budget (1982)	Industries Surveyed	# of Industries Permitted or Monitored	# of Samples Collected Per Year
1.	Indianapolis	750,000	4	5	5	14	\$281,077	800	180	1,200
2.	Dallas	812,610	4	7	6	17	400,000	—	250	2,500
3.	San Diego	773,996	7	2	4	13	500,000	4,000	700	800
4.	Memphis	661,319	8	10	8	26	400,000	150	100	
5.	Cleveland	638,793	—	6	6	12	300,000	1,100	1,100	1,600
6.	Boston	636,725	—	12	4	16	—	6,500	3,000	
7.	Columbus	535,610	4	7	4	15	500,000	1,200	—	
8.	Kansas City	472,529	—	8	5	13	480,000	900	—	500
9.	Pittsburgh	458,651	—	—	—	—	—	800	—	
10.	Nashville	446,941	—	7	8	15	500,000	800	85	
11.	Buffalo	407,160	—	5	4	9	230,000	1,400	190	
12.	Toledo	367,650	2	2	2	6	100,000	—	43	180
	Proposed Indianapolis	750,000	8	6	7	21	\$331,000	—	236	1,600

¹ See Appendix A to this report prepared by MBA.

EXHIBIT 15

INDIANAPOLIS PRETREATMENT PROGRAM COST ALLOCATION AND REVENUE ALTERNATIVES

REVENUE ALTERNATIVE	OPTION I			OPTION II				
	PERMIT	FLOW	FIELD SAMPLING	LABORATORY	PERMIT	FLOW	FIELD SAMPLING	LABORATORY
A. PERMITS								
-BUDGET	525655				482814			
-# PERMITS	236				236			
-\$/PERMIT	2227				2046			
B. 100% BY FLOW								
-BUDGET		525655						
-FLOW(MGY)		9855						
-\$/1000 GAL		0.053						
C. 100% BY SAMPLES								
-BUDGET			525655				482814	
-# SAMPLES			1764				1188	
-\$/SAMPLE			298				406	
D. FLOW/LABORATORY								
-BUDGET		329985		195670		307345		175469
-ALLOCATION BASE		9855		SEE		9855		SEE
-UNIT COST		0.033		EXHIBIT 11		0.031		EXHIBIT 12
E. FLOW/SAMPLING/ LABORATORY								
-BUDGET		187936	142049	195670		185172	122173	175469
-ALLOCATION BASE		9855	1764	SEE		9855	1188	SEE
-UNIT COST		0.019	81	EXHIBIT 11		0.019	103	EXHIBIT 12

NOTE: BUDGET NUMBERS ARE FROM EXHIBITS 11 AND 12.

The data, assumptions, and methodology used in this exhibit were based upon information provided by the City of Indianapolis and James M. Montgomery. The data and methodologies which are denoted as being provided by other agencies and organizations have not been verified. The achievement of any projection is dependent upon the occurrence of future events that cannot be assured. Therefore, actual results may vary from the projections, and the variations could be material. This information was not prepared for use in connection with any offering of securities.

In addition, it does not encourage recycling nor would it encourage industries to reduce their pollutant loads, which would result in lower monitoring costs.

Alternative B: 100 Percent to Flow

The second alternative is to allocate the entire program cost to the annual flow from the 236 permitted industries. This flow is estimated at 27 million gallons per day or 9,855 million gallons per year. This would result in a charge per 1,000 gallons. Alternative B would be easy to administer and would at least take into account the proportional flow contribution of the large dischargers. A drawback of this option is that it does not take into account the contribution of priority pollutants, and it would not encourage industries to reduce their wastestreams.

Alternative C - 100 Percent to Sampling

A third alternative is to allocate the program costs to the number of samples collected from industry by city crews. This option has one drawback: the city sampling for Group 2 and Group 2 industries is approximately the same; therefore, lower costs would not accrue to those smaller industries in Group 3.

Alternative D: Per Gallon with Lab Work at Cost

Taking one step toward an administratively more detailed program, the administrative and compliance planning and field work could be collected on a per gallon basis, with the laboratory cost being collected by analyses run for each individual industry. The proposed laboratory charges for Options I and II are the unit costs shown in Exhibits 11 and 12. This approach equitably attributes the lab analyses that are generated by high load industries and allows the administrative ease of a simple per-gallon charge for the other services.

While not directly encouraging recycling and reuse, this system does penalize industry for discharging a broader array of chemicals since each one would require analysis by the city. This alternative however, still discriminates against the high flow discharger that has very few priority pollutants in the wastewater.

Alternative E: Per Gallon Charge with Field and Lab Work at Cost

To more equitably allocate the field work performed by the city staff, a per-sample charge would generate sufficient revenue to cover the sampling program. In addition, as

mentioned above, the lab cost would be collected for each analysis run and the administrative and compliance planning program cost would be collected on a per-gallon basis.

This approach takes another step toward a more complicated administrative system, but it is a system which the city is currently handling quite easily and would not have any problem handling with the new data processing system. It is important to know that the per-gallon charge is similar to that mentioned above and would be applied to the 236 permitted industries that contribute approximately 27 Mgd. The per-gallon charge is currently being assessed against a different list of industries, and approximately 17 Mgd a flow is covered. The list would have to be revised, deleting some companies and adding others, to cover our entire permitted population.

This option does take another step toward a more equitable system since the larger industries that have an active city sampling program and a lot of analytical work would reimburse the city for those costs. This option does encourage recycling and reuse since each pollutant above certain levels is sampled and the field cost and analytical costs are then encouraged.

The laboratory unit costs or charges derived in Exhibits 11 and 12 were compared to the existing lab charges used by the City. As shown in Exhibit 16, the proposed charges vary considerably from the existing charges. With the existing charges, the laboratory in 1982 generated about \$69,078 in revenues. If the existing changes are maintained, the new program would generate about \$168,800 and \$148,661 in the 1984 program under Options I and II, respectively. However, the proposed charges would generate about \$195,750 and \$175,500 under Options I and II which would provide sufficient revenues to cover the ISB laboratory costs.

RECOMMENDED COST ALLOCATION PLAN

Peat Marwick feels that Option D, or Option E would provide the most equitable arrangement, and both would be administratively feasible.

Option E is consistent with the latest trend in utility financing, which is that the users pay for the services that they are provided. Based on our analysis of revenue programs in other cities, this program could be implemented in 1984 given the proper review cycle with the Chamber of Commerce and with the city administration and industry leaders. Under this option, the existing ISB surcharge of 3.6 cents per gallon could be reduced, but the charge for each industrial sample would be increased. This fairly allocates the major field costs to those industries that contribute a greater portion of the priority

EXHIBIT 16

INDIANAPOLIS PRETREATMENT PROGRAM ESTIMATED ANNUAL LABORATORY REVENUES

PARAMETER	UNIT COSTS		EXISTING PROGRAM		1984 PROGRAM				OPTION II	
	EXISTING	OPTION I	#SAMPLES ANALYZED	CITY REVENUES	#ROUTINE SAMPLES	REVENUES EXISTING	PROPOSED	#ROUTINE SAMPLES	REVENUES EXISTING	PROPOSED
PH	0.54	3.93	2151	18370	1872	15987	7357	1296	11068	5534
ROD	0.54	4.53	1022	8728	1502	12827	6804	1128	9633	5505
TSS	8.54	4.53	1460	12468	1432	12239	6487	1110	9479	5417
NH3	8.54	6.13	195	1665	1162	9923	7123	1122	9582	7226
DO	15.76	20.12	435	6856	1226	19322	24667	1098	17304	20423
PHENOLS	15.26	21.04	205	3128	1162	17732	24448	1116	17030	20490
CN	17.58	13.59	384	6751	1266	22256	24801	1124	19760	20513
METALS	6.00	8.00	1388	8328	9654	57924	77232	9034	54204	73537
GC TEST	6.00	168.29		0	100	600	16829	100	600	16857
SAMPLE PREP.	7.25		384	2784						
TOTAL			7240	69078	19376	168801	195749	17128	148661	175500

NOTE: *UNIT COSTS FOR OPTION I&II ARE DERIVED FROM EXHIBITS 11 & 12.
*SAMPLE ESTIMATES ARE FROM TASK 9 REPORT, TABLE 5-4.

The data, assumptions, and methodology used in this exhibit were based upon information provided by the City of Indianapolis and James M. Montgomery. The data and methodologies which are denoted as being provided by other agencies and organizations have not been verified. The achievement of any projection is dependent upon the occurrence of future events that cannot be assured. Therefore, actual results may vary from the projections, and the variations could be material. This information was not prepared for use in connection with any offering of securities.

pollutants to the plant. Before this plan is adopted, ISB should review the 236 companies to be permitted and verify the total flow of approximately 77 MDG. The revenue estimates for the alternatives were based on this number.

A nominal permit fee could be applied to the permit applications if desired by the City, but such a fee is not recommended here as a full or proportional cost recovery mechanism.

TOTAL PROGRAM COST COMPARISON

The Indianapolis Pretreatment Program will generate three major types of costs:

- . city program cost;
- . industry sampling and analytical direct costs for self-monitoring; and
- . pretreatment plant construction costs.

The pretreatment plan construction are discussed in the Task 14 report and will be the same under either city program option.

The city program costs and th industry direct costs for self-monitoring will be borne by the permitted industry. Therefore, a comparison of the total program costs under both proposed options was developed. The analysis is presented in Exhibit 17.

First, the 1983 total program costs are estimated. For program Options I and II, the direct costs to industry for self-monitoring are calculated based on the user of commercial laboratories for sampling and analysis. To the extent that in-house sampling and analyses still are used the direct industry cost may be lower.

Next, for each option the city program cost for Industrial Surveillance and the laboratory were added (from Exhibits 8 and 10).

As shown in Exhibit 17, industry has direct costs of \$337,637 for self-monitoring and will help support the ISB budget of \$331,055 and pay direct city laboratory costs of \$69,078. (See basis for laboratory estimate in Exhibit 16). This is an annual total of \$737,770.

Under Pretreatment program Option I the direct costs go down to \$221,856 and to reduced industry sampling and analytical work. The ISB program will be staffed up and city lab analysis will increase. The total cost to industry for Option I will be \$747,511.

EXHIBIT 17

INDIANAPOLIS PRETREATMENT PROGRAM TOTAL PROGRAM COSTS INCLUDING INDUSTRY SELF-MONITORING

	COMMER. LAB (\$/#)	EXISTING COSTS		-1984 PROGRAM-		OPTION II	
		INDUSTRY #	INDUSTRY COST	INDUSTRY #	INDUSTRY COST	INDUSTRY #	INDUSTRY COST
*SAMPLING COSTS							
-COMPOSITE	40.00	3116	124640	1632	65280	2496	99840
			0		0		0
*ANALYSIS COSTS							
-pH	3.50	16926	59241	13872	48552	13872	48552
-BOD	17.00	1200	20400	528	8976	900	15300
-TSS	9.00	1764	15876	480	4320	672	6048
-NH3	13.50	204	2754	432	5832	348	4698
-O&G	22.00	1122	24684	432	9504	216	4752
			0		0		0
-PHENOLS	21.50	372	7998	432	9288	264	5676
-CN	21.00	1044	21924	720	15120	216	4536
-AS	21.50	0	0	48	1032	36	774
-CD	10.00	588	5880	624	6240	576	5760
-CR	10.00	1045	10450	624	6240	60	600
-CU	10.00	844	8440	816	8160	348	3480
-PB	10.00	204	2040	384	3840	96	960
-HG	22.00	0	0	144	3168	48	1056
-NI	10.00	916	9160	720	7200	468	4680
-AG	10.00	0	0	0	0	0	0
-ZN	10.00	952	9520	768	7680	432	4320
			0		0		0
-SAMPLE PREP.	14.00	1045	14630	816	11424	576	8064
INDUSTRY SELF-MONITORING COST			337637		221856		219096
CITY PROGRAM BUDGET							
-ISB		331055		329985		307345	
-LAB		69078		195670		175469	
TOTAL			400133		525555		482814
TOTAL PROGRAM COST			737770		747511		701910

*NOTE: INDUSTRY COST IS ESTIMATED FROM ISB FILES OF INDUSTRY MONITORING FREQUENCIES;
COMMERCIAL LAB RATES ARE BASED ON LOCAL LAB PRICE QUOTES.

The data, assumptions, and methodology used in this exhibit were based upon information provided by the City of Indianapolis and James M. Montgomery. The data and methodologies which are denoted as being provided by other agencies and organizations have not been verified. The achievement of any projection is dependent upon the occurrence of future events that cannot be assured. Therefore, actual results may vary from the projections, and the variations could be material. This information was not prepared for use in connection with any offering of securities.

Option II allows industry in Group 1 to reduce some analytical work but requires self-monitoring for Group 2. The net direct costs is reduced to \$219,096. The city field operations for are reduced due to a reduction in city sampling of Group 2 industries city laboratory work is also reduced in Option II. The total cost to industry for Option 2 is \$701,910.

RECOMMENDED PROGRAM OPTION

Based on a review of the sampling, analytical, cost allocation, laboratory and field options the pretreatment study team recommends that Program Option II which includes reduced analytical work for industry and a more equitable distribution of sampling and analytical work between three industrial groups.

This option will allow the city to effectively protect the treatment plants and minimize the total program costs.

In addition, as the ISB obtain more data on the industrial dischargers over the next two years, the sampling and analytical work may be reduced once a solid historical data base is established which will allow the city to statistically evaluate each discharger and determine the required number of samples and analyses needed for each priority pollutant.

There are two critical steps in the implementation of the program. First is the development of the data management system and second, increasing the laboratory capacity to handle ISB samples. The conceptual design in Task 1.11 should be taken as the basic blueprint for designing and programming a data management system for the ISB. The laboratory capabilities should be expanded as discussed in the Task 9 Report and as defined above.

APPENDIX A

STAFFING PRETREATMENT PROGRAMS: A FIVE CITY REVIEW¹

As part of its effort to assess the future staffing of the Industrial Surveillance Branch, the pretreatment team looked at ongoing programs of a number of other cities. The process of comparing the levels of activity of other cities' pretreatment programs with their staff sizes and with the success with which they are able to carry on their pretreatment programs provides additional data on which to base ISB's future staffing level.

Milwaukee, San Diego, Chattanooga, St. Louis, and Salt Lake City are all cities which have apparently successful functioning pretreatment programs. These cities were also considered because, like Indianapolis, they have medium-large population and industrial bases.

Milwaukee

Milwaukee has a population of about 640,000. Their survey of industries found that about 116 industrial users will require monitoring of their wastewater discharges to ensure compliance with local standards and 230 industrial users will require monitoring to meet projected categorical standards. The 116 users will be required to obtain a discharge permit. Milwaukee authorities will conduct a compliance monitoring program to ensure that users are in compliance with the ordinance or with their permit. The compliance monitoring program will be combined with an existing user charge verification program and operated as a single program. 118 users are currently sampled for SS and BOD under the user charge verification program. (No other users are currently sampled). Industrial users are divided into 5 classes on the basis of yearly revenue. Frequency and sampling of users varies from class to class. Thus, Class 1 users are sampled 3 times a year for 7 days at a time with 24-hour flow-proportioned composites. Class 5 users are sampled once per year for one day with a 24-hour flow-proportioned time-proportioned composite.

It is anticipated that when the compliance monitoring program is initiated a total of 178 industrial users will be sampled. This will include 62 sampled for user charge purposes only, 60 sampled for pretreatment purposes only, and 56 sampled both for pretreatment and user charge purposes. The 116 users in the latter two categories will be required to have permits.

¹ Prepared by MBA.

Permittees monitored only for pretreatment purposes will be sampled once per year with 24 hour composites. Industries which are covered for both pretreatment and user charge verification purposes will be monitored more frequently. All samples will be analyzed for 5 metals plus BOD, SS and pH.

All permittees will self-monitor at least once per year. Industries discharging in excess of 10,000 gpd will be required to report their discharges semi-annually.

At the present time, industrial users are still categorized on the basis of revenue, although sewer impact may be considered in the future. Users which are sampled for both user charge and pretreatment purposes are now sampled at the same frequency as users who are sampled for user charge verification purposes only.

When the pretreatment program is initiated, a total of 178 users will be monitored for SS and BOD and of these 116 will be sampled for SS, BOD and five metals.

Staff necessary to handle this level of activity are expected to include an industrial waste manager, two industrial waste engineers, and six monitoring crews. This represents an addition of one industrial waste engineer and one monitoring crew over current levels. Additional equipment will be purchased on an as needed basis. Sufficient laboratory staff and facilities are already available to handle the pretreatment program.

San Diego

San Diego, with a population of about 875,000 and a surveyed industrial base of about 4,000, monitors and permits 700 industries. All of San Diego's industries are classified as one of four categories:

- . Category I - includes industries that require pretreatment--200 industries are in this category.
- . Category II - includes industries that have some toxic discharge in addition to sanitary flow--400 industries are in this category.
- . Category III - includes industries that have some non-toxic discharges and sanitary flow but do not require pretreatment--100 industries are in this category.
- . Category IV - includes dry industries or industries with sanitary flow only.

Sampling activity varies on the basis of category and flow. Category I industries with a flow in excess of 100,000 gpd, for example, are sampled by the city four times per year.

Category I industries with a flow of up to 10,000 gpd are sampled once a year. Sampling activity is correspondingly less in Category II and in Category III an industry with flow in excess of 100,000 gpd is sampled twice a year while an industry with flow less than 10,000 gpd is sampled only once every other year.

Self-monitoring activity is required at a level exceeding that of city monitoring. High volume Category I industries, for example, will be required to self-monitor 12 times per year. The level of activity decreases with decreasing volume and is relatively lower in Categories II and III, but in almost all cases self-monitoring activity is from 2 to 3 times as frequent as city sampling.

Category IV industries do not self-monitor and will not be sampled by the city.

San Diego projects that 803 samples will be taken yearly. This will include 487 composites that are of the 24-hour or 72-hour type and 486 grab samples. From these 803 samples, an estimated 16,900 lab analyses will be made. San Diego anticipates performing this level of activity with a total staff of 13 including 4 administrative people, 2 field staff and 7 lab people.

Salt Lake City

Salt Lake City, with a population of about 163,000, has identified approximately 400 potential dischargers of industrial waste. Of this group, approximately 93 industrial users have been placed on an Industrial User List and have been identified as requiring monitoring and surveillance. Inclusion on the Industrial User List was determined on the basis of a user's potential for harming the treatment plant, discharging toxic wastes which would pass through the treatment plant into the environment, altering the plant's sludge to the extent that it would be considered a hazardous waste, or discharging significant quantities of any of the 179 priority pollutants.

The approach Salt Lake City is adopting toward monitoring is that because there is no immediate threat to the treatment plant, efforts will be bent toward building a reliable data base without requiring excessive or unnecessary monitoring. The 93 users identified as potential problems to the system have been assigned, on an individual basis, and self-monitoring sampling and analytical frequencies have been defined. These frequencies

are based on the individual industry's discharge characteristics and quantities. The City will monitor industries at a rate of 25-30 percent of required self-monitoring frequencies. Discrepancies between city and industry results may result in increased city sampling.

Salt Lake City offers industry the option of having the city perform all sampling and analysis, with the self-monitoring requirement. It is anticipated that this option could save industry money while allowing industry to select the sampling methodology best suited to it. It is estimated that 70 percent of the users will ask the city to do all sampling and analysis.

For the first year of program activity it is estimated that 706 pretreatment samples will be taken and analyzed. These samples will include 462 24-hour composites that are of the 24-hour type and 244 grab samples. For the first five years of the pretreatment program it is expected that one sampling crew of two persons will be sufficient. In addition to a sampling crew it is estimated that five persons will be required to carry out demonstration, laboratory, and clerical tasks, for a total of seven persons on the staff.

Chattanooga

Chattanooga, with a population of approximately 170,000, has identified about 340 industrial users believed to be capable of discharging non-domestic wastes to the sewer. Of these, 158 firms have been issued permits limiting their discharges. Self-monitoring requirements for each industry are outlined in the permits. The permits also set out pretreatment compliance schedules for the 95 percent of permitted industries whose discharges exceed current standards.

Chattanooga's sampling program is built around the self-monitoring requirements. Industries perform most sampling themselves, with city crews performing periodic unannounced compliance monitoring. Chattanooga reports that this system has worked well for them and that no cases of data falsification have been discovered.

Self-monitoring requirements for specific pollutants vary depending on the level at which the pollutant is present--above ordinance level, below ordinance level but above domestic level, or below domestic level. Frequency of self-monitoring for a given industry varies depending on discharge volume and on whether the industry is being monitored for enforcement purposes, surveillance purposes, or surcharge purposes. Surcharge monitoring may be required for BOD, COD and SS. An industry with an industrial discharge volume of 100,000 gpd being monitored for enforcement purposes will be required to self-monitor on a monthly basis, while one being monitored for

surcharge purposes only will be required to self-monitor only twice per year. Self-monitoring frequency requirements drop correspondingly for industries with discharge flows of 50,000-100,000 gpd, 10,000-50,000 gpd, 800-10,000 gpd and less than 800 gpd.

It is anticipated that two sampling crews of two persons each will be needed to perform the planned city sampling activity. In addition, industrial waste program staff will include an industrial monitoring supervisor and a secretary. One chemist and two lab technicians provide full-time laboratory support to the monitoring program.

APPENDIX B

SURVEY OF PRETREATMENT PROGRAMS IN OTHER CITIES

City	Population 1980	Number of Industries:		Procedures Used to Notify Industrial Users of the PT Program Requirements	Ordinance Modifications Needed to Ensure Adequate Legal Authority Under the PT Program	Cost Allocation Method Being Used to Ensure Adequate Funding for the PT Program
		Surveyed	Permitted Major Minor			
Boston	563,000	6,500	4 categories: 1. Have PT or will need - 1,000. 2. Have toxic and domestic waste but do not need PT - 1,000. 3. Non-toxic and domestic - 1,000. 4. Domestic only - 3,500.	EPA rules do not apply in MSD - they have authorization to set own limits (primary treatment facility).	None - already have adequate legal authority.	75 communities contribute - each community collects charges from users in its own way and pays MSD.
Buffalo	358,000	1,400	70 currently permitted but will be upgraded soon to 190.	Computer identified relevant IUS by SIC code and letter is mailed out.	Ordinance is o.k. - but they are a multi-jurisdictional area - the other communities need to get their ordinances in line.	No special charge for monitoring and sampling. PT budget is added to regular surcharge and spread over all IUS.
Chattanooga	170,000	350	110 permitted.	Send letter by regular or certified mail.	None. City's program was certified by EPA in July 1982. Some minor modifications may be added to make program run more smoothly.	PT program is funded out of general fund derived from overall sewer revenues. City is considering a program where 2 permit classes would pay flat fees to cover PT costs.
Cleveland	574,000	1,100 have been monitored since 1973 - did not do a special survey. Administrative ordinance - no permitting system.	Has no permitting system and does not intend to have one.	Federal regulations are copied and mailed out.	Code needs modification - issue has not been addressed yet.	All revenues come out of general sewer surcharge. There is no special PT charge. ISB does have independent budget.
Columbus	565,000	1,200	Has no permitting system and does not intend to have one.	No system yet.	Surrounding communities have agreed to enforce POTW's rules - it is not known if that will satisfy EPA.	
Dallas	964,000	250 IUS of concern. Have no permitting system but will have one in future - will use contract system.	Documentation is mailed out or handed out during visit.	Legal authority was available under old ordinance - now new ordinance will give POTW control over contract cities in suburbs.		PT costs are built into current water and sewer surcharge system but ISB is autonomous and gets own budget out of general fund.

SURVEY OF PRETREATMENT PROGRAMS IN OTHER CITIES (CONTINUED)

City	Population 1980	Number of Industries: Permitted:		Procedures Used to Notify Industrial Users of the PT Program Requirements	Ordinance Modifications Needed to Ensure Adequate Legal Authority Under the PT Program	Cost Allocation Method Being Used to Ensure Adequate Funding for the PT Program
		Surveyed	Major Minor			
Kansas City	448,000	900	Has no permitting system.	PT program not in operation yet. They will notify IUS by letter in future.	Believes they already have adequate legal authority.	PT program is a component of the sewer surcharge to all users (including resi- dential/commercial).
Memphis	646,000	150	100 permitted.	Letter sent to IUS with latest regs.	None.	PT program is funded out of the general sewer sur- charge.
Milwaukee	670,000	700	None yet. Estimate 200 in future.	State Department of Natural Resources has responsibility but has asked POTW to perform this function. POTW sends info package to concerned IUS.	Have rewritten ordinance and will soon take action to have it adopted by City Council.	Administrative costs come out of total district budget. Sampling and anal- ysis costs are billed directly to industry.
Nashville	447,000	800	85 permitted.	Send letter by regular or certified mail.	None - other than finding the proper terminology to satisfy EPA.	Financed out of general fund from water and sewer surcharge. ISB has no independent budget.
Pittsburgh	424,000	800 to be surveyed.	Does not have a permitting sys- tem.		In process of redrafting ordinance-- 75 contributing communities need to adopt comparable ordinance.	Funds come out of general sewer surcharge revenues. ISB has no independent budget. No charge for monitoring & sampling. Have federal grant to implement regs.
St. Louis	453,000	2,200	No permitting system.	Initially sent letters to electroplaters. Now awaiting more definitive info on other categoricals before initi- ating action.	None.	ISB gets portion of over- all District budget.
Salt Lake City	163,000	600	82	Letters and on-site visits.	None.	Everything is billed directly to IUS.
San Diego	875,000	3,000	3 categories of permitees: total 700 1 (major) 2 3 200 400 100	Send letter.	They have already received EPA pro- gram approval.	Annual permit fees pay for the whole program. ISB has an independent budget - all from permit fees.
Toledo	355,000		Has no permitting system. Has 43 industries of concern.	Has done no formal notifi- cation yet - will send letter with a copy of the regs.	None.	Funds come from general sewer surcharge revenues. ISB has no independent budget but "needs" one.

SURVEY OF PRETREATMENT PROGRAMS IN OTHER CITIES (CONTINUED)

City	Number of People Employed in the Industrial Surveillance Branch			Industrial Surveillance's Annual Budget	How are Costs Allocated within the ISB (Industrial Surveillance Branch)	Number of Samples Collected Annually
	Lab	Field	Administration			
Boston	Contracted out.	12	2 executives 2 clerks	16	Does not know. Receives funds from MSD sewerage division - ISB does not have independent budget.	
Buffalo	Separate from ISB - has own budget.	2 techs 3 investi- gators	1 chief 1 chemist 2 clerks	9	Does not know.	
Chattanooga	City lab has 7 people. 2 work full-time for ISB.	4	1 engineer 1 secretary	8	\$205,000	90 IUs are sampled per year. 60,000 analyses per year are performed on plant and IUs.
Cleveland	Separate from ISB - has own budget.	6	6	12	\$300,000	1,600
Columbus	10 people devote 1/3 time to ISB.	7	1 manager 2 secretaries 1 janitor	11	Estimates \$500,000.	Does not know.
Dallas	2 labs are separate.	7	1 division mgr. 1 asst. manager 1 pt coordinator 1 special product 1 supt. 1 monitoring supt. 3 clerks	17	\$400,000 (excluding lab costs - lab has own budget).	2,500
Kansas City	Contracted out.	8	5	6 in winter 12 in summer (use college engineering students in summer)	\$480,000	40/mo.
Memphis	8	10	8	26	80% salary (7 positions await clarification of Act to be filled).	Does not know.
Milwaukee	City has 35-40.	15	4	19 (plus part of lab).	Does not know. 70% salary 30% equipment	700
Nashville	Lab works for whole city.	7	8	15	Does not know - no one has ever broken it out.	Does not know.
Pittsburgh					There is no special staff for pretreatment work. There is no special budget.	

SURVEY OF PRETREATMENT PROGRAMS IN OTHER CITIES (CONTINUED)

City	Number of People Employed in the Industrial Surveillance Branch			Industrial Surveillance's Annual Budget	How are Costs Allocated within the ISB (Industrial Surveillance Branch)	Number of Samples Collected Annually
	Lab	Field	Administration			
St. Louis	16	5	6	Does not know.	Does not know.	5,200
Salt Lake City	12 people work part-time in ISB and do field work.		1	Does not know.	Does not know.	400
San Diego	7	2	4	\$500,000	65% salary 35% equipment and supplies	800
Toledo	2	2	2	\$100,000	80% salary 20% equipment	15 high strength IUS sampled once a month.

SURVEY OF PRETREATMENT PROGRAMS IN OTHER CITIES (CONTINUED)

City	Are Manuals Used to Instruct Field and Administrative Staff on Proper Procedures	Pollutant Limits		Mechanism Used	Self-Monitoring Reports Collected and Analyzed	Do you Attempt to Work Back Into System to Find Sludge Discharges
		How Set	Limit			
Boston	Yes.	Limits are only on oil and grease and temp. In future - limits will be stated on permits.	Concentration.	City does monitoring.	Yes - try to trace manually, but not with much success.	
Buffalo	No manuals of own. 6 month training program before going into field. Use EPA manuals.	Original limits not empirically based. Is now doing plant tolerance study and will get new limits.	Concentration.	Yes. These are spot checked.	Yes - City divided into grid - still difficult to find discharges.	
Chattanooga	No manuals. Staff learns through hands-on experience.	Engineering study based on mass balance developed two sets of limits: one set lists most critical concentration for particular pollutants; second set lists levels not to be exceeded by a given industrial discharge at point of entry to sewer system.	Concentration.	Yes.	Yes. Very difficult but they are working on system to do so.	
Cleveland	No manuals. Have own training programs for safety and sampling techniques.	Followed example of Chicago primarily.	Mass and concentration.	IUS who are required to install PT must self-monitor, sample once/week and report once/month.	Yes - they note potential for slug discharges during investigations and keep track.	
Columbus	No manuals. Use informal training program.	Looked at other ordinances - in future plan to cite federal regs and set limits where required.	Maximum Concentration.	Sometimes.		
Dallas	No manuals. Have own informal procedures.	Consulting firm did engineering study of plant tolerances.	Concentration.	ISB does all monitoring. May self-monitor in future.	Yes - with good success. They know who is capable of discharging what.	
Kansas City	Yes.	Do not have specific limits in ordinance - use 1972 Missouri guidelines - except limit on hexachrome and cyanide.	Concentration.	12-15 IUS self-monitor once/month and send in quarterly report.	Have not had problem with slug discharges.	
Memphis	Yes.	An engineering study was used to set ordinance limits.	Maximum and minimum concentration limits.	IUS self-monitoring every month - ISB review reports. IUS do own monitoring and lab work.	Yes - ISB is quite successful in tracing them. IUS leave tell-tale signs on site.	

SURVEY OF PRETREATMENT PROGRAMS IN OTHER CITIES (CONTINUED)

City	Are Manuals Used to Instruct Field and Administrative Staff on Proper Procedures	Pollutant Limits		Self-Monitoring Reports Collected and Analyzed	Do you Attempt to Work Back into System to Find Sludge Discharges
		How Set	Mechanism Used		
City					
Milwaukee	No manuals. Staff learns through hands-on experience.	Based on removing specific percentage of metals from sludge that will be placed on land or used as fertilizer and will give a site a lifetime of 28 years.	Concentration.	Yes.	Yes, but it is very difficult due to the size of the City's sewer system.
Nashville	No manuals - have own training program - try to meet all EPA approved safety procedures.	Most are set in accordance with state's NPDES permit. BOD & SS limits based on own analysis.	Concentration.	IUS monitor once every 3 months. They have lab analysis done and send results to ISB.	
Pittsburgh	No manuals - they have their own basic training procedures.	They use many sources. Especially Ohio River Basin regs, public health standards, Department of Environmental Resources guidelines, etc. Now waiting for EPA to finalize regs.	Concentration.	No self-monitoring.	Very difficult to do. They have a combined storm and sanitary sewer. "Hit or Miss".
St. Louis	Yes--a field procedures manual.	Based on engineering study.	Concentration.	Yes.	Yes.
Salt Lake City	Yes.	Based on engineering study.	Concentration.	Yes. IU has option of taking 3/4 of own samples or having City take all samples.	Yes, with fair success. They know which IUS are capable of slugs.
San Diego	Yes.	Some by engineering studies, some by looking at other cities' limits and some by following EPA standards.	Concentration and mass-based.	The permit states how often an IU must monitor and send in results.	Yes - they periodically monitor trunk sewers and if they find anything abnormal, they start sampling upstream.
Toledo	Not yet. Will do so soon using Denver as a guide.	Does not know how current limits were set. They are now considering new limits.	Concentration with provisions for mass-based.	Not much self-monitoring done.	They record slugs and are collecting data to enable tracing in future.

SURVEY OF PRETREATMENT PROGRAMS IN OTHER CITIES (CONTINUED)

City	Rationale for Random Sampling Procedures Utilized	Procedures for Responding to Industries Who Fail to Respond to Program Requirements	Kinds of Sampling, Monitoring and Laboratory Equipment and Facilities Used	Additional Equipment or Facilities Needed
Boston	Random sampling within group of IUS of concern.	Letter sent to IU. If still is non-compliance, IU's name is submitted to Attorney General.		
Buffalo	Random sampling within group of IUS of concern.	1. Investigator visits. 2. Send letter. 3. \$500 fine for 1st violation. 4. \$6,000 fine for repeat violation.	All standard equipment.	GC.
Chattanooga	Random sampling within group of concern.	ISB informs IU of violation by letter--asks for plans on how IU will correct problem within 30 days. There have been no violations requiring court action.	Standard equipment. Also have a microtox.	GC.
Cleveland	All random. IUS out of compliance are sampled most often.	1. Send notice of violation. 2. Meeting where IU promises to change. 3. If no improvement, IU must install Pt. 4. \$500/day fines.	All standard equipment.	GC MS.
Columbus	Larger industries most frequently sampled. Non-random.	Letter sent to industries - not much done beyond that.	All standard equipment.	GC MS and Liquid Chromatography.
Dallas	They have an organized sampling schedule but also do spot checks.	In process of revising internal procedures so they can shut off water.	All standard equipment.	More space.
Kansas City				
Memphis	Largest IUS most often sampled. Also IUS suspected of causing problems and permittees.	IUS are sent a show cause letter. If they fail to comply ISB shuts them down.	All standard equipment.	None.
Milwaukee	Sampling schedule set 3-6 months in advance. IU does not know in advance it will be sampled.	ISB determines severity of violation and issues letter first. If no response, they use progressively stronger steps.	All standard equipment except they do not have GC MS.	None.
Nashville	No real random sampling. They go after IUS they suspect.	They send letter. Eventually shut off water if IU fails to comply.	All standard equipment.	GC MS (but they do not expect to get one. Would require hiring too many extra people).
Pittsburgh	IUS are chosen from a pool of IUS of concern.	They notify IU of violation, but if IU refuses to comply POTW must ask municipality to take action. POTW can do nothing.	All standard equipment.	None.

SURVEY OF PRETREATMENT PROGRAMS IN OTHER CITIES (CONTINUED)

<u>City</u>	<u>Rationale for Random Sampling Procedures Utilized</u>	<u>Procedures for Responding to Industries Who Fail to Respond to Program Requirements</u>	<u>Kinds of Sampling, Monitoring and Laboratory Equipment and Facilities Used</u>	<u>Additional Equipment or Facilities Needed</u>
St. Louis Salt Lake City	They have a set schedule for most IUs but might randomly sample new IUs.	They send letters telling IU of violations, then continue to sample throughout year. If no improvement, City requires IU to install Pt.	All standard equipment. Have all standard equipment for conventional--send out metals for analysis.	None. Incubators, GC MS, testing equipment, expanded lab. They are currently restricted to taking 3 samples per day.
San Diego	Sampling is based on what they find in trunk pipeline. If they find something bad they sample upstream.	1. Send letter. 2. Hold hearing. 3. Refer case to attorney or shut off water.	"Everything they could need": Gas chromatograph; AA; mass spec; scanning spec; alpha-beta radiation; 3 trucks; 1 mobile lab; samplers, etc.	More space.
Toledo	They will look at IUs with potential for impacting POTW.	1. Send letter. 2. If non-compliance, they shut water off.	Most standard equipment.	Lab is being renovated. They will be getting more sophisticated equipment and will share an AA with City. Will not get GC MS.

SURVEY OF PRETREATMENT PROGRAMS IN OTHER CITIES (CONTINUED)

<u>City</u>	<u>Do you have a Public Participation Program</u>	<u>Are you Involved in a Technical Exchange Network with Other Cities</u>	<u>Has your PT Program Been Approved Yet By EPA</u>	<u>If Your Program Has Not Yet Been Approved By EPA, What Remains To Be Done</u>
Boston				Because they are a primary treatment plant they have a different arrangement. It would cost \$2 billion to upgrade the plant to secondary status.
Buffalo			No.	1. Agreements with outlying communities. 2. Ordinance limits (everything else is approved).
Chattanooga	Yes.	AMSA.	Yes.	
Cleveland			No.	1. Need to assemble all monitoring data and submit to EPA. 2. Need to upgrade ordinance.
Columbus			No.	They need to justify their pollutant limits.
Dallas	Yes - very active.		No.	They are now preparing their submission to EPA. They need to get their new ordinance enacted.
Kansas City				
Memphis	Yes - meet with lots of environmental groups.	Yes - AMSA.	No.	The state of Tennessee has to be approved first. Memphis is all ready to submit its program.
Milwaukee		AMSA.	No.	
Nashville		AMSA; Water Pollution Control Federation, etc.	No one in Tennessee has been approved.	Does not know - will meet next week with EPA to discuss it.
Pittsburgh			No.	"Lots" - and they must have it done by November 1983. They need new ordinance, new permits system, etc.
St. Louis	Yes.	AMSA.	Yes.	
Salt Lake City			Yes.	
San Diego		Nothing formal - belong to general assoc. etc.	Yes.	
Toledo	Yes - public seminars and speeches to Chambers of Commerce.	AMSA.	No.	Develop ordinance limits. Develop monitoring and enforcement procedures. Develop funding plan. Get more equipment and staff.